TMC COVID-19 MONITORING METRICS

Daily report
October 2, 2020
TMC KEY TAKEAWAYS FOR OCTOBER 1, 2020

1. Effective Reproduction Rate, R(t)
   - R(t) for the Greater Houston Area (9-county MSA) is 0.77\(^1\)
     - This was the **twenty-second day below 1.0**, which means the virus spread is decreasing. Compared to:
     - Last week, R(t) was **0.70** for Greater Houston Area

2. Testing
   - The current 7-day average COVID-19 testing positivity rate is **3.3%** for TMC hospital systems. Compared to:
     - Last week\(^2\): **3.4%**
     - Last month: **5.7%**

3. New cases
   - **Yesterday, 388 new people\(^2\) were reported as testing positive for COVID-19** in the Greater Houston Area. DSHS also released **228** older cases recently reported as of yesterday. Compared to:
     - Last week: **373** new cases/day
     - Last month: **1,415** new cases/day

4. Hospitalizations
   - **Yesterday, TMC admitted 81 new COVID-19 patients** in TMC hospital institutions\(^4\). Compared to:
     - Last week: **78** hospitalizations/day
     - Last month: **88** hospitalizations/day

5. ICU capacity
   - As of October 3rd, TMC’s ICU Phase 1 (non-pandemic configurations) is **88%** full, and TMC is not into Phase 2 plans for intensive care.

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1. https://sph.uth.edu/dept/bads/covid19-dashboard
2. Source: TX Health and Human Services [https://dshs.texas.gov/coronavirus/AdditionalData.aspx](https://dshs.texas.gov/coronavirus/AdditionalData.aspx)
3. Testing positivity charts from the TMC hospital systems have been added to the daily metrics, in addition to the charts presented from the Texas Department of State Health Services data for the Greater Houston Area. Values from the most recent week may be updated as new test data is compiled.
4. Source: Internal data collected from the systems CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UTMB
R(t): EFFECTIVE REPRODUCTION RATE FOR THE GREATER HOUSTON MSA\(^1\)

R(t) measures how effective our collective behaviors (e.g., mask wearing and social distancing) are in slowing the growth of the virus. It is the average number of people who become infected by one infectious person. If R(t) is above 1.0, the virus spread is increasing; if R(t) is below 1.0, the virus spread is slowing.

Today: 0.77  
22 Days < 1.0

Last Week: 0.70 for Greater Houston MSA

1.  https://sph.uth.edu/dept/bads/covid19-dashboard
TEST POSITIVITY RATES FOR TMC HOSPITAL SYSTEMS

A low positivity rate may indicate declining spread of the virus.

1. Testing data includes: CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, and UT Health

Community Control: <5% for 14-days

Community Spread: >5%

Today: 3.3%
22 Days < 5%

Last Week: 3.4%
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COVID-19 TESTING METRICS FOR TMC HOSPITAL SYSTEMS

Positivity rates across TMC hospital systems increased from 5% on June 1st to a peak of 23% on July 9th.

The current 7-day average testing positivity rate across TMC hospital systems is 3.3%.

Notes:
- Recent values will be updated each day as new test results are compiled.
- Test data provided daily from TMC hospital systems.

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TMC hospital systems COVID-19 average daily tests performed, last 30 days

Sep daily administered tests reported  7-dy trend of % test positivity for COVID-19

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TMC COVID-19 average daily tests performed

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

1. Testing data includes: CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, and UT Health
   Note: May not include all hospitals within each system
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**WEEKLY AVERAGE OF COVID-19 TESTING METRICS ACROSS TMC HOSPITAL SYSTEMS**

1. Testing data includes: CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, and UT Health
   Note: May not include all hospitals within each system

2. The most recent week may be updated as new test data is compiled.
DAILY NEW COVID-19 POSITIVE CASES FOR THE GREATER HOUSTON AREA

Measures the public health strategy shift from mitigation to containment. When the number of new daily cases is over 200, it is difficult for public health teams to effectively trace to help isolate further spread of the virus.

Note: DSHS released 228 older cases

Today: 388

Community Control: <200 for 14-days

1. Source: TX Health and Human Services (https://www.dshs.texas.gov/coronavirus/): Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller

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DAILY NEW COVID-19 POSITIVE CASES

Greater Houston Area

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

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WEEKLY AVERAGE OF DAILY NEW COVID-19 POSITIVE CASES

# Daily average new cases in Greater Houston Area¹ (Monday-Sunday)

1. Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller
2. Includes only net new cases. Excludes 4,135 cases reported by the state as "old" cases during week of 9/14

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

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There have been 198,152 total positive COVID-19 cases to date.

Cumulative case load is \(~1.0X\) what it was 7 days ago.

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TMC DAILY NEW COVID-19 HOSPITALIZATIONS

Monitoring threshold: Threshold is exceeded by the occurrence of a positive daily growth rate, averaged over 7 days.

Current status: -1.7% daily growth rate (averaged over 7 days) in the COVID-19 daily hospital admissions 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.
WEEKLY AVERAGE OF TMC DAILY NEW COVID-19 HOSPITALIZATIONS

# average daily hospitalizations in TMC system (Monday-Sunday)

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

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**Current status:**

-1.2% total daily growth rate (averaged over 7 days) in COVID-19 patients TMC hospitals
  - -0.9% ICU daily growth rate
  - -1.4% 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.

Source: Internal data collected from the systems CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UTMB

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OVERVIEW OF TMC ICU BED CAPACITY AND OCCUPANCY

This capacity is actively managed by each of the hospitals and changes on a minute-by-minute basis

Potential additional Intensive Care capacity

- Phase 3 Intensive Care: 504 beds
- Phase 2 Intensive Care: 373 beds
- Phase 1 Intensive Care: 1,330 beds

Further capacity can be added by converting additional Medical / Surgical beds to ICU.

1,177 – Total ICU beds occupied

157 – Current COVID-19 ICU patients

This can be managed by appropriately transferring patients from ICU to Medical / Surgical beds and potentially by delaying some procedures.

ICU beds occupied by COVID-19 (%) | Total ICU beds occupied (%)
--- | ---
Phase 1, 2, & 3 Intensive Care | 7% | 53%
Phase 1 & 2 Intensive Care | 9% | 69%
Phase 1 Intensive Care | 12% | 88%

Internal data collected from CHI St Luke’s, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UTMB.

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## TMC COVID-19 PATIENT SUMMARY

*COVID-19 positive patients (excludes PUIs)* through TMC system

<table>
<thead>
<tr>
<th>Category</th>
<th>Day/day</th>
<th>Week/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total hospitalized</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Currently hospitalized</td>
<td>-2%</td>
<td>-10%</td>
</tr>
<tr>
<td>Discharged</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Deaths</td>
<td>0%</td>
<td>2%</td>
</tr>
</tbody>
</table>

- **TMC has served** \(24,805\) positive in-patients to date
- **Of those served,** \(21,961\) patients have been successfully discharged

1. Persons under investigation for COVID-19 but not yet confirmed
2. Houston MSA includes 9 counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller

Source: Internal data collected from the systems CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UTMB

"TMC" refers to the group of systems that make up Texas Medical Center
APPENDIX
AS OF SEPTEMBER 30, 2020
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.

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of Tests</th>
<th>Number of Positives</th>
<th>Test Positivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/23</td>
<td>28,000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>06/24</td>
<td>26,000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>06/25</td>
<td>24,000</td>
<td>0</td>
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<tr>
<td>06/26</td>
<td>22,000</td>
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<td>06/27</td>
<td>20,000</td>
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<td>06/28</td>
<td>18,000</td>
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<td>06/29</td>
<td>16,000</td>
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<td>06/30</td>
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<tr>
<td>07/01</td>
<td>12,000</td>
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<td>07/02</td>
<td>10,000</td>
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<td>07/03</td>
<td>8,000</td>
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<tr>
<td>07/04</td>
<td>6,000</td>
<td>0</td>
<td>0%</td>
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<tr>
<td>07/05</td>
<td>4,000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>07/06</td>
<td>2,000</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

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

Current status:
0 days of positive average growth in the % test positivity trend.

Note: Public testing data for this chart may lag several weeks.

Source: TX Health and Human Services [Link]
Note: Excludes days with no tests reported.

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

Reflects retroactive changes in testing data made by Texas Department of Health and Human Services on 6/9/2020.
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Source: TX Health and Human Services (https://dshs.texas.gov/coronavirus/AdditionalData.aspx)
Note: Public testing data for this chart may lag several weeks

Note: Excludes days with no tests reported

Reflects retroactive changes in testing data made by Texas Department of Health and Human Services on 6/9/2020

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Current status:
0.2% daily growth rate (averaged over 7 days) in COVID-19 patients in ICU

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 ICU shows an objective view of how COVID-19 impacts hospital systems.

Source: Internal data collected from the systems CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UTMB
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**TOTAL TMC COVID-19 POSITIVE PATIENTS IN MED SURG BEDS**

- **Daily COVID-19 patients in Med Surg**
- **7-day trend of COVID-19 patients in Med Surg**

**Current status:**
-1.2% daily growth rate (averaged over 7 days) in COVID-19 patients in med surg

**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 shows an objective view of how COVID-19 impacts hospital systems.

Source: Internal data collected from the systems CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children's Hospital, UTMB

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TMC CAPACITY PLANNING PROTOCOL

Definitions

Phase 1 Intensive Care Beds
- ICU bed configuration and staffing under non-pandemic situations

Phase 2 Intensive Care Beds
- Builds on ICU capacity using our existing plans - through increasing staffing levels and ratios, mobilizing additional Intensive Care equipment & utilizing additional beds

Phase 3 Intensive Care Beds
- Further planned utilization of Phase 2 levers of surge capacity to provide additional temporary Intensive Care capacity

Capacity planning

Our hospitals are very experienced at operating at near 100% capacity and are able to flex up and down when needed (e.g., with additional staffing)

We have proactively developed our surge plans and are able to add extensive capacity when needed (e.g., by adding additional staff, additional equipment, additional beds, and increasing densification)

Additionally, we can moderate intake of non-COVID 19 patients, based on the clinical needs of the elective portion of these patients. Non-COVID 19 patients today represents the vast majority of our patients.
**OVERVIEW OF TMC BED STATUS**

**Phase 1 Intensive Care Beds (1330 beds)**
- ICU bed configuration under non-pandemic conditions

**Phase 2 Intensive Care Beds (1703 beds)**
- Planned additional Intensive Care capacity for the duration of pandemic

**Phase 3 Intensive Care Beds (2207 beds)**
- Planned temporary Intensive Care surge capacity
- Ability to further increase Phase 3 through conversion of non-Intensive Care beds

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**COVID-19 – Intensive Care Beds usage**
- Phase 1 IC
- Phase 2 Intensive Care
- Phase 3 Intensive Care

**Non-COVID-19 – Intensive Care Beds usage**

**Non-COVID-19 – Medical Surgical Beds usage**

**COVID-19 - Medical Surgical Beds usage**

**Current available (unused) beds**

**Additional capacity (if needed)**

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**TMC leaders are actively managing, and can adjust, elective procedures to ensure sufficient capacity for COVID-19 needs**

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For the past 7 days, the average daily growth in occupancy for COVID-19 patients has been:
- 0.2% for ICU
- -1.2% for Med Surg

TMC is in Phase 1 Intensive Care Capacity

If this growth continues, TMC:
- Will likely not move into Phase 3 Intensive Care within 2 weeks

This calculation assumes a similar occupancy for non-COVID-19 procedures as today

The health and wellbeing of our community requires that each of us do our part to slow the spread of COVID-19, including:
- Maintaining social distance
- Wearing a mask while in public
- Washing hands regularly
- Test and self-isolate, if sick
# TMC EXPECTED PPE NEEDS

<table>
<thead>
<tr>
<th></th>
<th>Average daily burn rate(^1)</th>
<th>Estimated days available</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>N95 respirator masks</td>
<td>7,572</td>
<td>274</td>
<td><img src="https://i.imgur.com/Green.png" alt="Green" /></td>
</tr>
<tr>
<td>Surgical face masks</td>
<td>133,336</td>
<td>144</td>
<td><img src="https://i.imgur.com/Green.png" alt="Green" /></td>
</tr>
<tr>
<td>Eye protection</td>
<td>4,259</td>
<td>634</td>
<td><img src="https://i.imgur.com/Green.png" alt="Green" /></td>
</tr>
<tr>
<td>Gowns</td>
<td>55,792</td>
<td>121</td>
<td><img src="https://i.imgur.com/Green.png" alt="Green" /></td>
</tr>
<tr>
<td>Gloves</td>
<td>1,037,641</td>
<td>45</td>
<td><img src="https://i.imgur.com/Green.png" alt="Green" /></td>
</tr>
</tbody>
</table>

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\(^1\) Calculated using trailing 2-week average burn rate

Source: Internal data collected from the systems CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UTMB

Monitoring threshold:

30-day supply of critical PPE items

Current status:

All critical PPE items within range

Note:

Data shown represents all TMC institutions and might vary from institution to institution
**TMC TESTING CAPACITY**

*PCR tests, (#/day)*

<table>
<thead>
<tr>
<th>Current capacity</th>
<th>Expected capacity (2-4 weeks)</th>
<th>Expected capacity (4-6 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15,329</td>
<td>17,479</td>
<td>17,564</td>
</tr>
</tbody>
</table>

**Monitoring threshold:**

5,000-10,000 PCR tests per day available for hospital patients and healthcare worker surveillance (with <24 hour turnaround time)

**Notes:**

Capacity is dependent on critical supplies (reagents)

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

**Source:** Internal data collected from the systems Baylor College of Medicine, CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UT Health, UTMB

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TMC DATA COLLECTION PROCESS

Clinical data
Previous day’s clinical data submitted by each hospital system by 4p.m. daily
Bed capacity data regularly confirmed with each hospital system as individual surge capacity plans evolve

Houston MSA COVID-19 cases
New daily COVID-19 case data for Houston MSA collected from TX DHS (Data captured on publication date, but reflects data from the previous day)

Houston MSA COVID-19 tests
New daily testing data for Houston MSA collected from TX DHS (Data captured on publication date, but reflects data from 2 days prior)

Dashboard compilation
Hospital clinical data and Houston MSA data analyzed and aggregated into dashboards by TMC

Leadership Review
Compiled dashboards reviewed and finalized by TMC leadership

TMC dashboard publication
Finalized dashboard published on tmc.edu website

1. System-wide clinical data collected from CHI Texas Division, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, Texas Children’s Hospital, UTMB. TMC institutions represent ~70-80% of licensed beds in the 9 Houston MSA counties
2. Houston MSA includes 9 counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller
3. Source: txdhs.gov

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