Welcome!

COVID-19
Employer Testing Options

WEBINAR
To ask questions during the webinar, please enter them into the Questions section.
The mission of the Houston Area Safety Council is building safe workplaces by improving the quality and integrity of the workforce.

The mission of the UT School of Public Health is changing the culture of health through excellence in graduate education, research and engagement.
THANK YOU
TO OUR PLATINUM SPONSORS

Special thanks to Community Health First ER for helping to supply testing equipment.
AGENDA

• Current COVID-19 trends
• Current Testing options
• Current CDC guidelines
• Q&A
This graph shows a daily number of new COVID19 Cases (dots) over time in Texas. The graph also shows the moving average in daily number of Cases (line) over time. In the past week, there has been a **25.77% increase** in cumulative Cases. Since Phase I reopening, there has been a **1037.34% increase** in cumulative Cases. Since Phase II reopening, there has been a **582.71% increase** in cumulative Cases.
% Change of Daily Cases and Testing since 4/22 (beginning of testing data)

This graph shows a comparison of the percent change in new daily cases compared to the percent change in new daily tests in Texas. If the two lines are parallel, then the increase in cases could potentially be explained by increased testing. If the cases (line) increase faster than the tests (line), this suggests that the increase in cases cannot be explained by increased testing.

Source: www.Texaspandemic.org, UTHealth School of Public Health
Texas COVID-19 Positivity Rate – July 20, 2020

Positivity Rate 15.05% as of 7/20/2020

Source: Chart: Frank Heinz/NBC 5 Source: Texas Department of State Health Services
# WE ARE WATCHING A SET OF EARLY WARNING SIGNALS TO INFORM FACT-BASED CONVERSATIONS ABOUT THE NEED FOR ADDITIONAL MITIGATION ACTIONS

## Monitoring metrics

<table>
<thead>
<tr>
<th>Warning signals for Houston MSA</th>
<th>Current status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COVID-19 case growth trend</strong></td>
<td>10 days of positive average growth in daily case trend</td>
</tr>
<tr>
<td>Case growth trend can be used to suggest future peaks, focused on 7-day trend of:</td>
<td></td>
</tr>
<tr>
<td>• Upward trajectory of new daily cases</td>
<td></td>
</tr>
<tr>
<td>• Upward trajectory of positive tests as a % of total tests</td>
<td></td>
</tr>
<tr>
<td><strong>Recent growth of COVID-19 patients admitted to ICUs supports future ICU resource planning</strong></td>
<td>0.0% daily growth rate (averaged over 7 days) in new COVID-19 positive patients requiring intensive care. Currently TMC institutions are able to serve all patients requiring intensive care</td>
</tr>
<tr>
<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>14,329 PCR tests per day (maximum)</td>
</tr>
<tr>
<td><strong>COVID-19 testing capacity (daily)</strong></td>
<td>1.6M N95 masks</td>
</tr>
<tr>
<td><strong>TMC System equipment &amp; PPE needs</strong></td>
<td>33.7M gloves</td>
</tr>
<tr>
<td>30 days estimated based on current burn rate:</td>
<td></td>
</tr>
<tr>
<td>• 300K N95 masks</td>
<td></td>
</tr>
<tr>
<td>• 28M gloves</td>
<td></td>
</tr>
<tr>
<td>• 1.8M gowns</td>
<td></td>
</tr>
<tr>
<td>15.5M gowns (disposable + reusable)</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
2. 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
CURRENT STATE OF THE UNION

- How contagious is this virus?
- Based on how many people an infected person will pass it on to
  - Flu has a reproduction number of $\approx 1.3$
  - Measles reproduction rate of $\approx 18$
  - H1N1 2009 reproduction rate $\approx 1.5$
  - COVID-19 reproduction rate $\approx 2.2$
# $R_0$ of Some Diseases

<table>
<thead>
<tr>
<th>Infectious disease</th>
<th>Host</th>
<th>$R_0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>Humans (UK)</td>
<td>12-18</td>
</tr>
<tr>
<td>Pertussis (whooping cough)</td>
<td>Humans (UK)</td>
<td>12-18</td>
</tr>
<tr>
<td>Chickenpox (varicella)</td>
<td>Humans (UK)</td>
<td>10-12</td>
</tr>
<tr>
<td>Rubella</td>
<td>Humans (UK)</td>
<td>5-7</td>
</tr>
<tr>
<td>Smallpox</td>
<td>Humans</td>
<td>3.5-7</td>
</tr>
<tr>
<td>Feline immuno deficiency virus (FIV)</td>
<td>Cats</td>
<td>1.1-1.5</td>
</tr>
<tr>
<td>Domestic</td>
<td>Dogs (Kenya)</td>
<td>2.44</td>
</tr>
<tr>
<td>Rabies</td>
<td>Seals</td>
<td>2-3</td>
</tr>
<tr>
<td>Phocine distemper</td>
<td>Cattle</td>
<td>2.6</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>Humans</td>
<td>2-4</td>
</tr>
<tr>
<td>Influenza (Pandemic)</td>
<td>Livestock farms (UK)</td>
<td>3.5-4.5</td>
</tr>
<tr>
<td>Foot-and-mouth disease</td>
<td>Humans</td>
<td>4-12</td>
</tr>
<tr>
<td>Mumps</td>
<td>Humans</td>
<td>5</td>
</tr>
<tr>
<td>Poliomyelitis (polio)</td>
<td>Hetro</td>
<td>2.5</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Male homosexuals UK</td>
<td>4</td>
</tr>
<tr>
<td>HIV</td>
<td>Female prostitutes in Kenya</td>
<td>11</td>
</tr>
<tr>
<td>HIV</td>
<td>Humans</td>
<td>~100</td>
</tr>
<tr>
<td>Malaria</td>
<td>Human</td>
<td>2.5</td>
</tr>
<tr>
<td>SARS</td>
<td>Cattle (UK)</td>
<td>7</td>
</tr>
<tr>
<td>IBR</td>
<td>Cattle</td>
<td>2.6</td>
</tr>
<tr>
<td>TB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TESTING OPTIONS

WHAT’S AVAILABLE RIGHT NOW

✓ Viral testing
✓ Antibody testing
TESTING OPTIONS

WHAT’S COMING SOON?

✓ Nasal swab in clinic – quick results
✓ Timeline unknown
TESTING OPTIONS

VIRAL
- PCR/Molecular
- Antigen

ANTIBODY
 TESTING OPTIONS

**PCR**

- Nasal swab test sent to a lab
- Checks for virus RNA in your body

**ANTIGEN**

- A point-of-care/in clinic quick test
- Checks for virus proteins
A blood sample

Checks for past exposure to the virus

Indicates if you have antibodies as a result of the infection
**PROS AND CONS**

**PCR**

- Deep nasal test (uncomfortable)
- Can take several days to get back
- Highly sensitive – sometimes to a fault
Deep nasal test (uncomfortable)

Less sensitive than a PCR test, but highly specific to positives

Results back within minutes to hours
**PROS AND CONS**

**ANTIBODY**

- Does NOT tell you if you have the virus at the time of testing
- May reflect immunity, but duration unknown
- Immunity may decrease or disappear over time
IgM = fights early infection

IgG = memory/long term antibodies

If re-exposed

First exposure
ANTIBODIES TAKE DAYS, WEEKS, AND MONTHS
SARS-CoV-2 antibody testing
NOTHING IS EVER FOOL-PROOF

How many tests does it take?

- Singapore, 70 COVID-19 positive patients, NP swabs
  - 1 test: 88.6% of cases
  - 2 tests: 95.7% of cases
  - 3 tests: 100% of cases
What counts as close contact?

- You were within 6 feet of someone who has COVID-19 for at least 15 minutes
- You provided care at home to someone who is sick with COVID-19
- You had direct physical contact with the person (touched, hugged, or kissed them)
- You shared eating or drinking utensils
- They sneezed, coughed, or somehow got respiratory droplets on you
CDC GUIDANCE

• Quarantine for 14 days if you think you were *exposed* to someone
  • 14 days from the exposure

• Isolate for 10 days if you are *sick or tested positive*
  • 10 days from when symptoms started or when you tested positive
When can I escape quarantine and/or isolation?

If **quarantining** – after the 14 days assuming no symptoms and no new exposures

If **isolating** – after the 10 days

AND

No fever for 24 hrs

AND

Symptoms have improved
COVID-19
Employer Testing Options

WEBINAR

Q&A