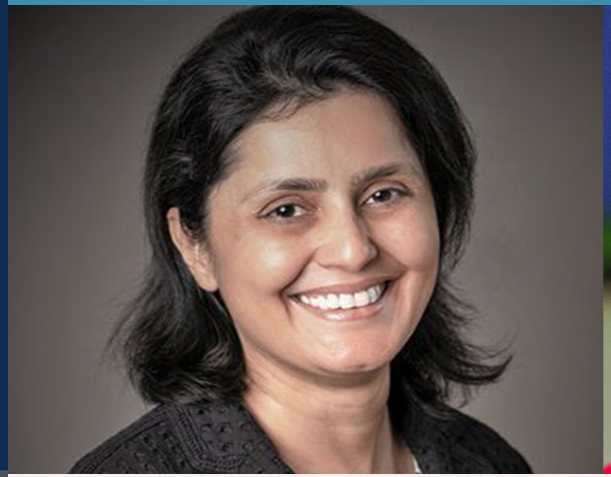
THE HEALTHIER TEXAS SUMMIT SERIES

Presented by Blue Cross Blue Shield of Texas

August 25 at 10 am

State of COVID-19 Across Texas



DR. BIJAL BALA
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Register at HealthierTexasSummit.com

UTHealth®
The University of Texas
Health Science Center at Houston
School of Public Health

What is COVID 19?

- COVID-19 is caused by a new coronavirus. The SARS-CoV-2 virus is a betacoronavirus, like MERS-CoV and SARS-CoV. All three of these viruses have their origins in bats (animal to person spread)

- Person to person spread:
  - Between people who are in close contact with one another (within about 6 feet).
  - Through respiratory droplets produced when an infected person coughs, sneezes or talks.
  - These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.
  - Some recent studies have suggested that COVID-19 may be spread by people who are not showing symptoms.

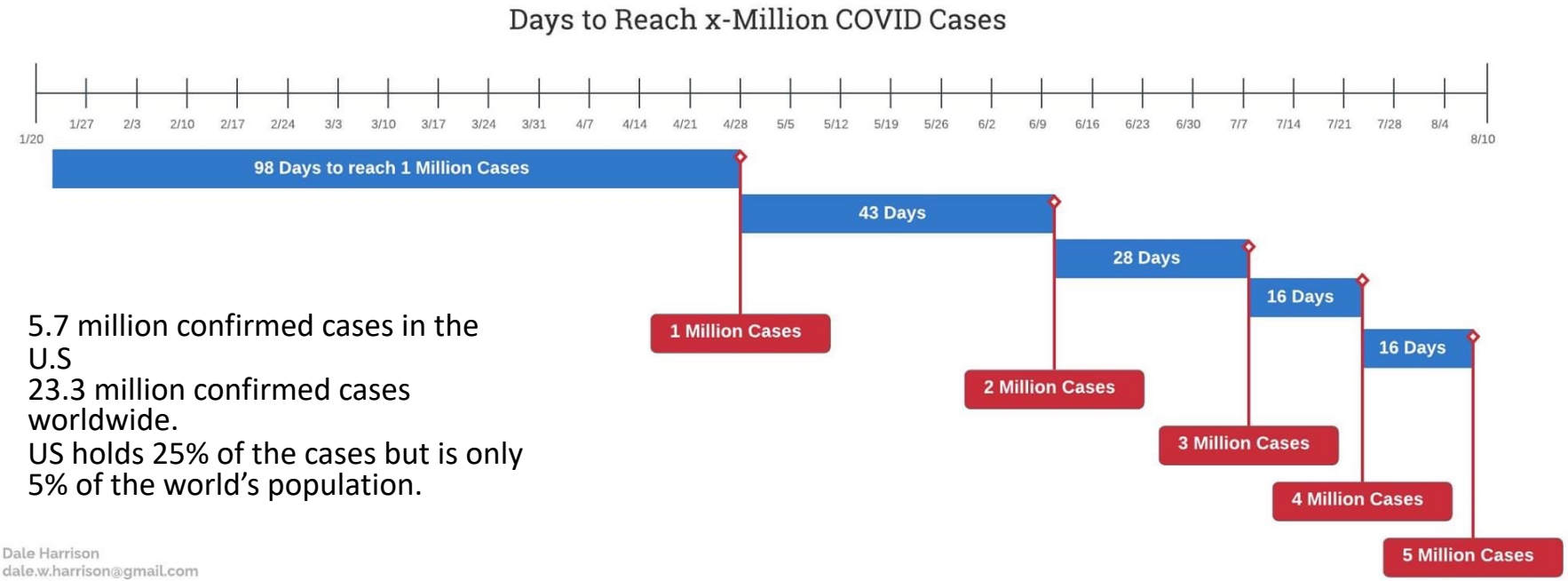
Source: Centers for Disease Control and Prevention at https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/summary.html

Symptoms of COVID 19

- Fever
- Cough
- Shortness of breath or difficulty breathing
- Chills
- Repeated shaking with chills
- Muscle pain
- Headache
- Sore throat
- New loss of taste or smell

Source: Centers for Disease Control and Prevention at https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html

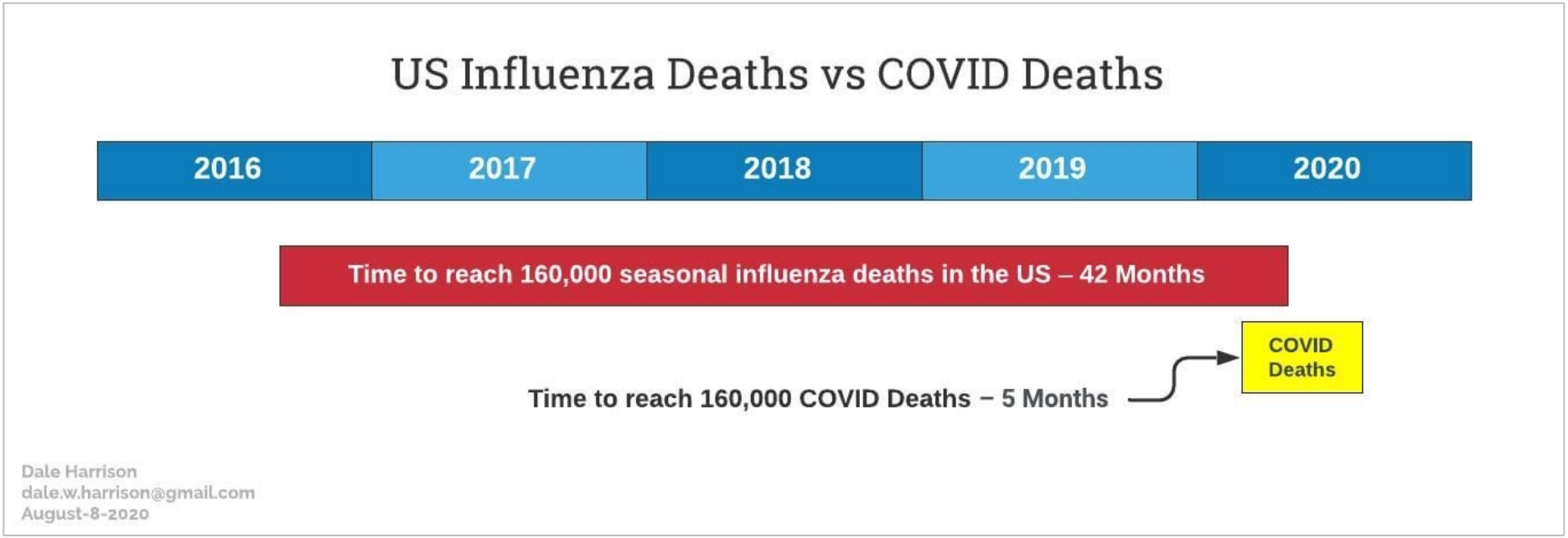
How long has it taken us to get here?



5.7 million confirmed cases in the U.S
23.3 million confirmed cases worldwide.
US holds 25% of the cases but is only 5% of the world's population.

Dale Harrison
dale.w.harrison@gmail.com
August-8-2020

COVID-19 and Influenza



STATE OF COVID-19 IN TEXAS

- CURRENT STATE
  - COVID-19 Dashboard
  - Hot Spots, Rate of Transmission
  - Hospital Capacity

- SURVEILLANCE
  - Symptom Tracking

- UPCOMING CHALLENGES
  - Re-opening schools
  - Flu and COVID-19

- CALL TO ACTION
  - Public
  - Public health authorities
  - Public health researchers

CURRENT STATE OF COVID-19

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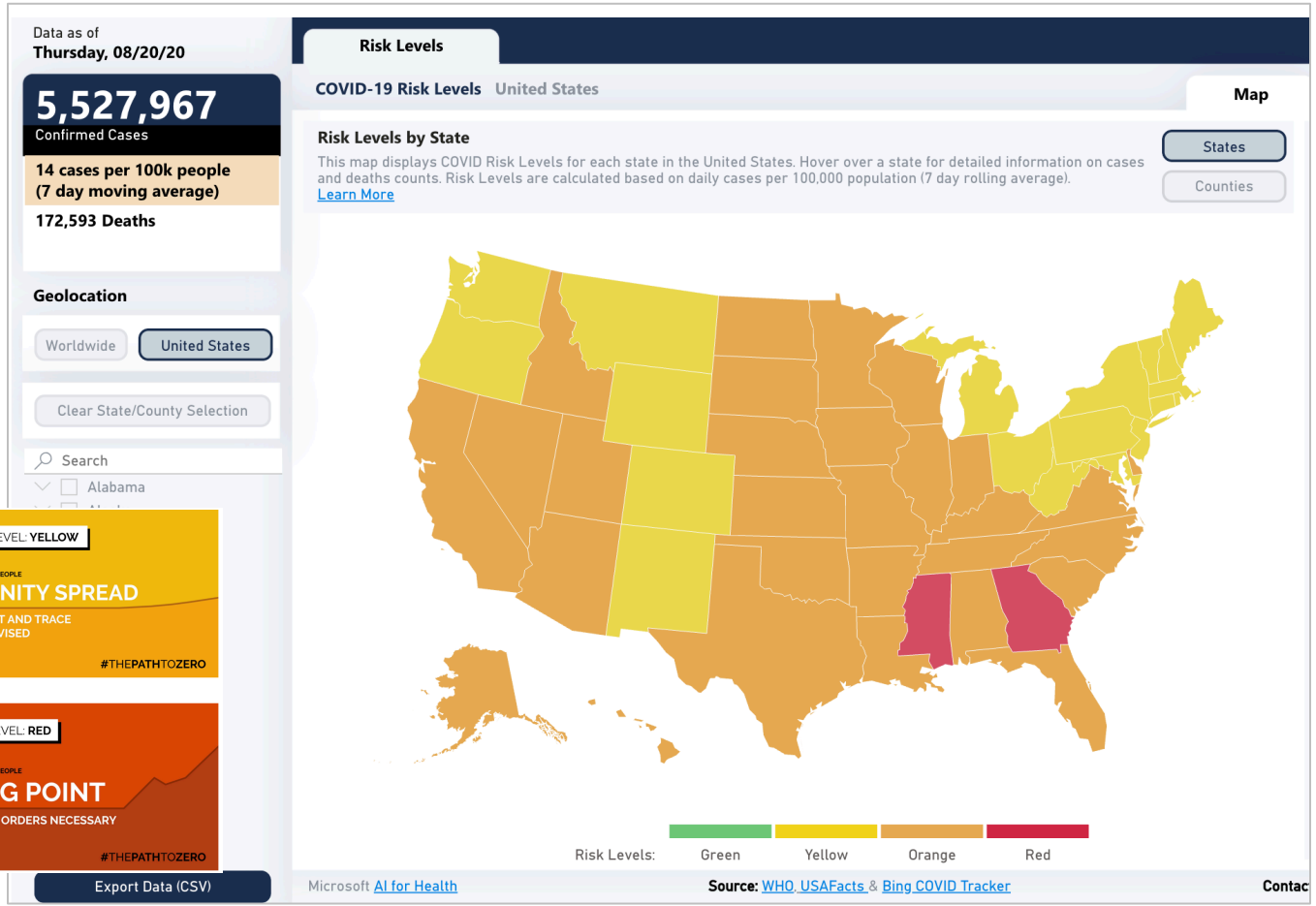
Current State in the US

https://globalepidemics.org/



UTHealth School of Public Health COVID-19 dashboard

- Collaborative effort of School of Public Health faculty and students in epidemiology, biostatistics, data sciences, and health promotion.
- Provides real-time, interactive data analytics to monitor and identify the current hot spots for COVID cases and symptoms in the state of Texas, including prediction models to assess future risk of spread.
- Provides interpretation of the findings to help public health decision making and educate the public.
- We will continue to build on the dashboard to house and display relevant public health resources, thus effectively informing strategic decision-making to mitigate the spread

Critical trends: Current Level of Viral Transmission (Aug 23)

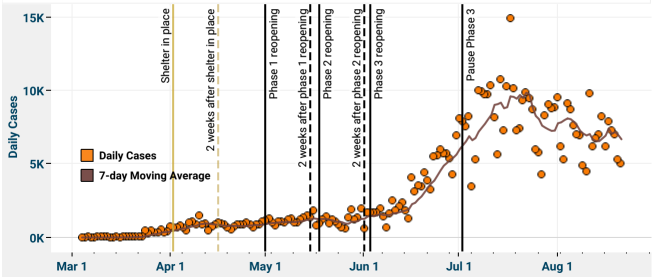
www.texaspandemic.org

Use the dropdown menus to select a region of interest and display trends for that area >>

County: All | Trauma Service Area: All | Public Health Region: All | Metropolitan/Non: All

Daily Cases Trend

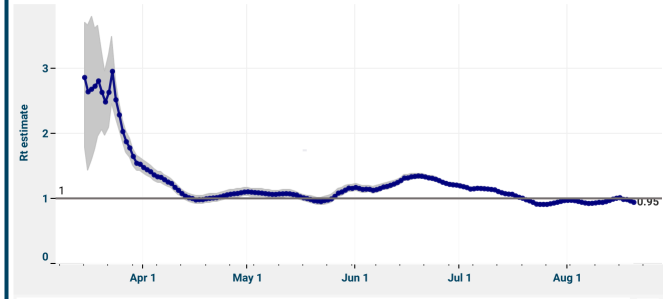
This graph shows a daily number of new COVID19 Cases (dots) over time in **Texas**. The graph also shows the moving average in daily number of Cases (line) over time. In the past week, there has been a **7.33% increase** in cumulative Cases. Since Phase I reopening, there has been a **1841.84% increase** in cumulative Cases. Since Phase II reopening, there has been a **1065.63% increase** in cumulative Cases.



View Daily Cases Trend for multiple Counties, TSAs, PHRs or Metro/non >

Rt estimate

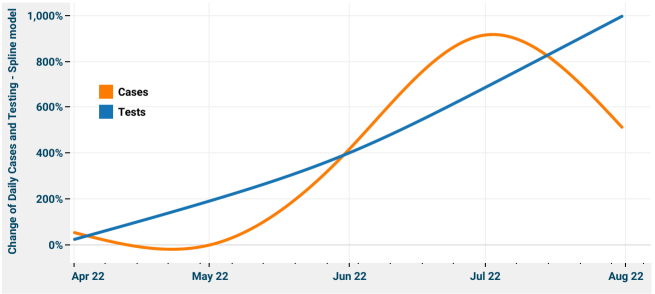
This graph shows the R(t) over time. R(t) is a measure of contagiousness or how many people one COVID19 person infects. If R(t)>1, the epidemic is increasing. If R(t)< 1, the epidemic is declining. There is higher alert if the whole interval is above the horizontal line at 1. For **Texas**, the rate of contagiousness is **0.95**; the epidemic is **decreasing**.



View Rt estimate for multiple Counties, TSAs, PHRs or Metro/non >

% Change of Daily Cases and Testing since 4/22 (beginning of testing data)

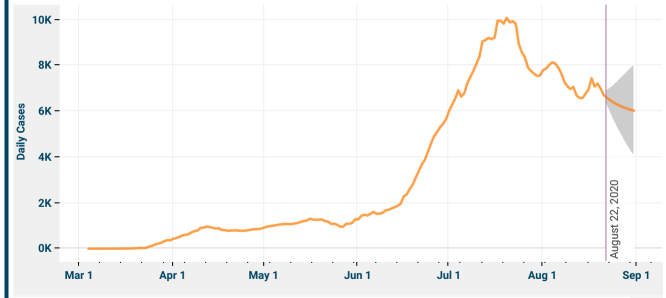
This graph shows a comparison of the percent change in new daily cases compared to the percent change in new daily tests in **Texas**. If the two lines are parallel, then the increase in cases could potentially be explained by increased testing. If the cases (line) increase faster than the tests (line),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



View %Change for multiple Counties, TSAs, PHRs or Metro/non >

Prediction of number of new cases in the next 10 days with 95% confidence intervals

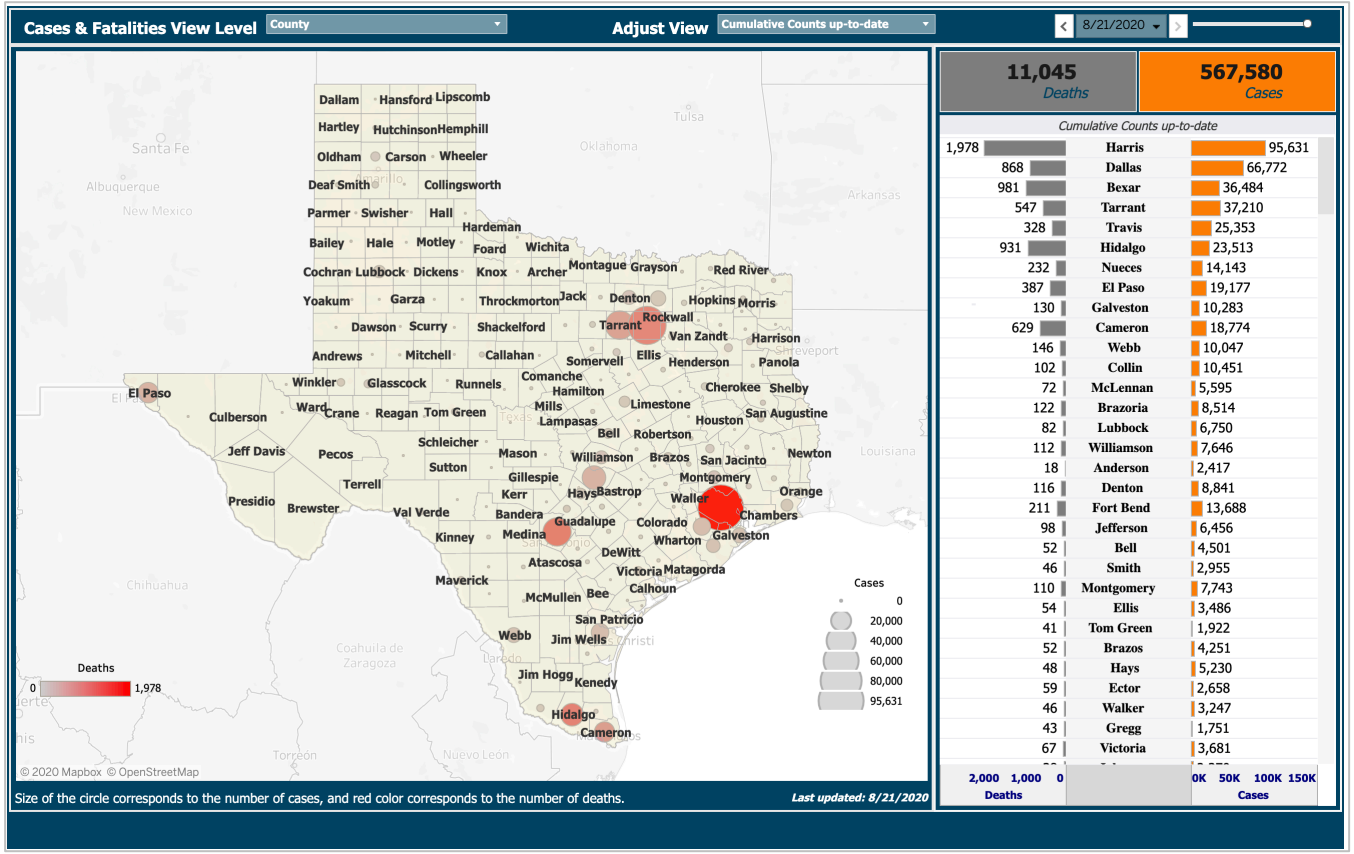
Predictions in **Texas.** If the upper band for the predictions is approximately below the current number of new cases, cases are expected to decrease. If the lower band for the predictions is approximately above the current numbers of new cases, cases are expected to increase. Otherwise, they are not expected to increase or decrease significantly. For dates prior to the predictions, the 7-day moving average is shown.



View Predictions for multiple Counties, TSAs, PHRs or Metro/non >

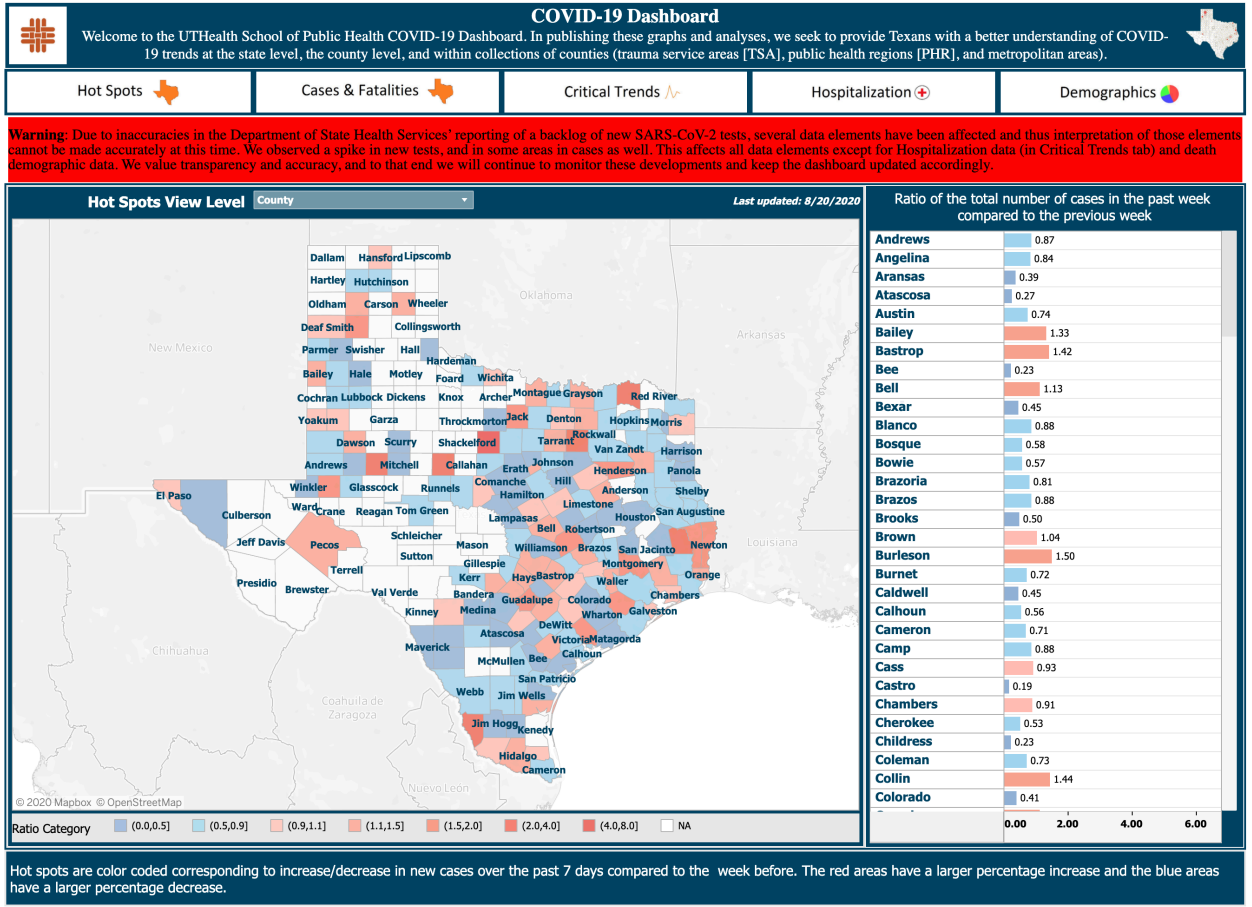
Cases and Fatalities (Aug 23)

www.texaspandemic.org

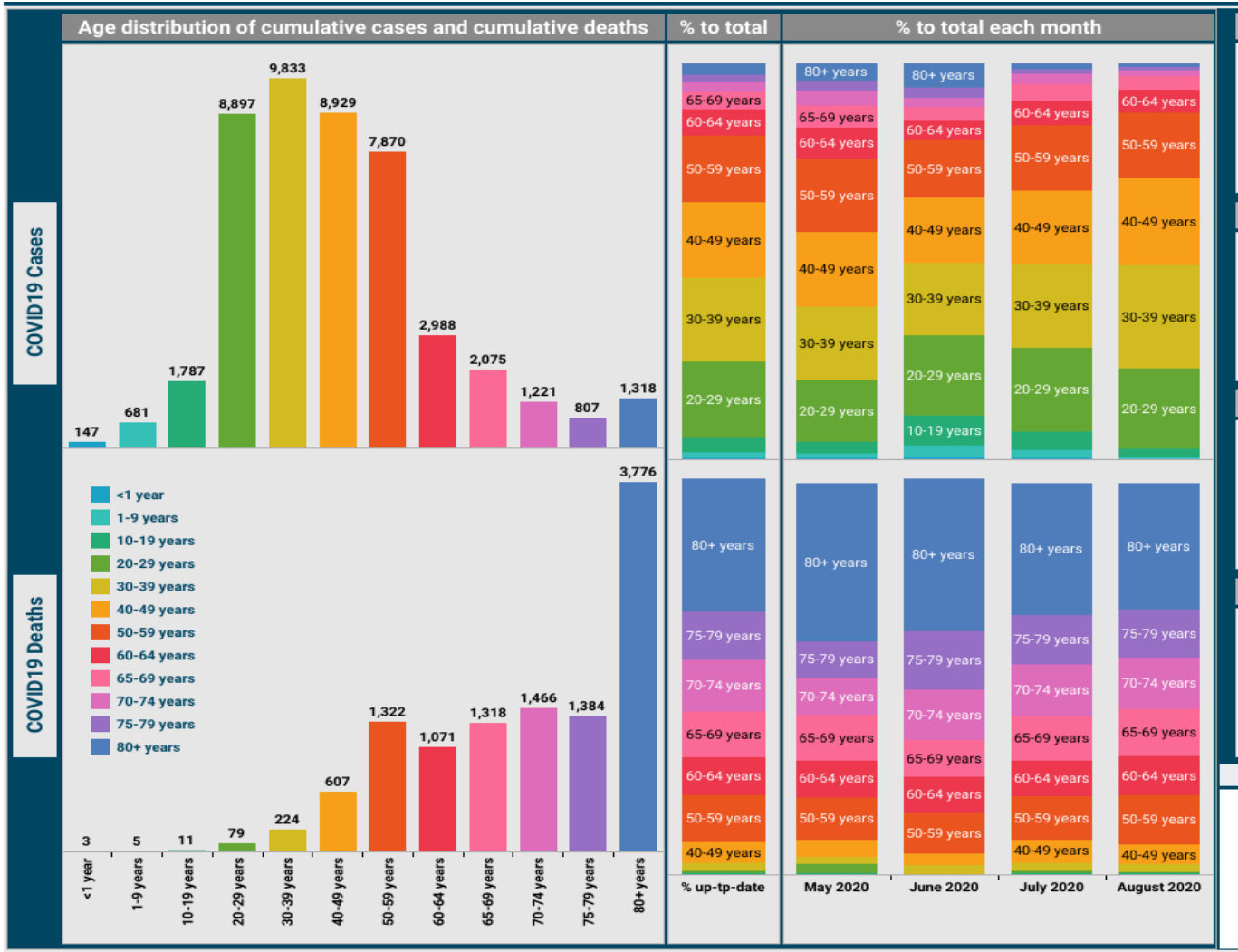


Hot spots in Texas

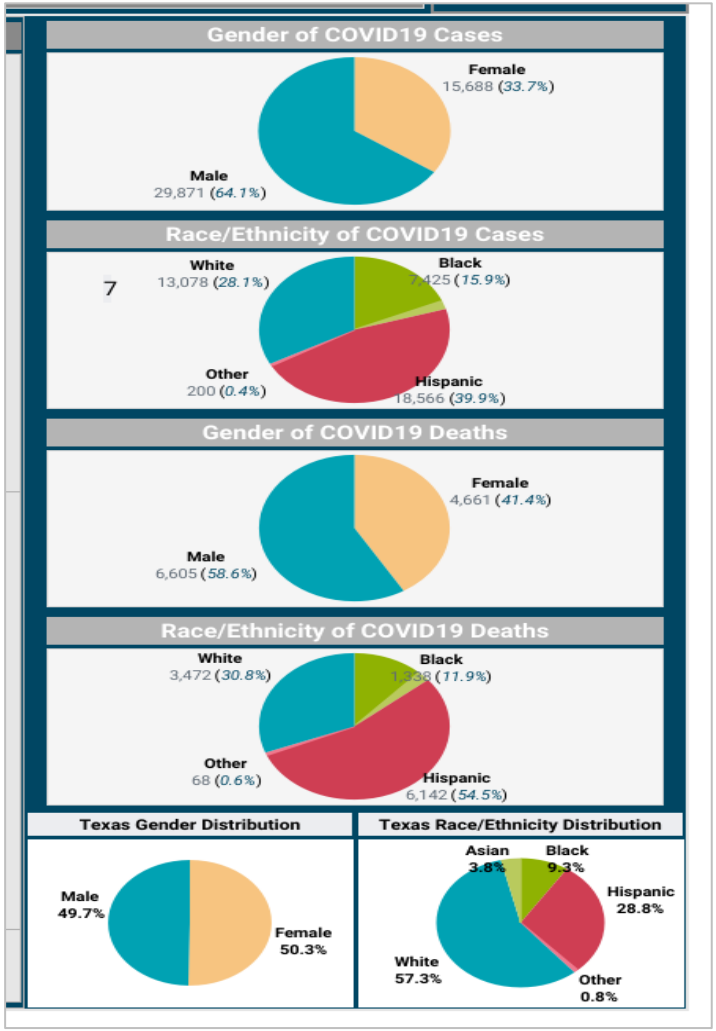
www.texaspandemic.org



Demographics of cases and fatalities:
only 8% of case demographic data available;
100% case demographics for deaths



Case and death demographics



Males, Hispanics at greatest risk.

HOSPITAL CAPACITY

Surge after Phase 1 re-opening

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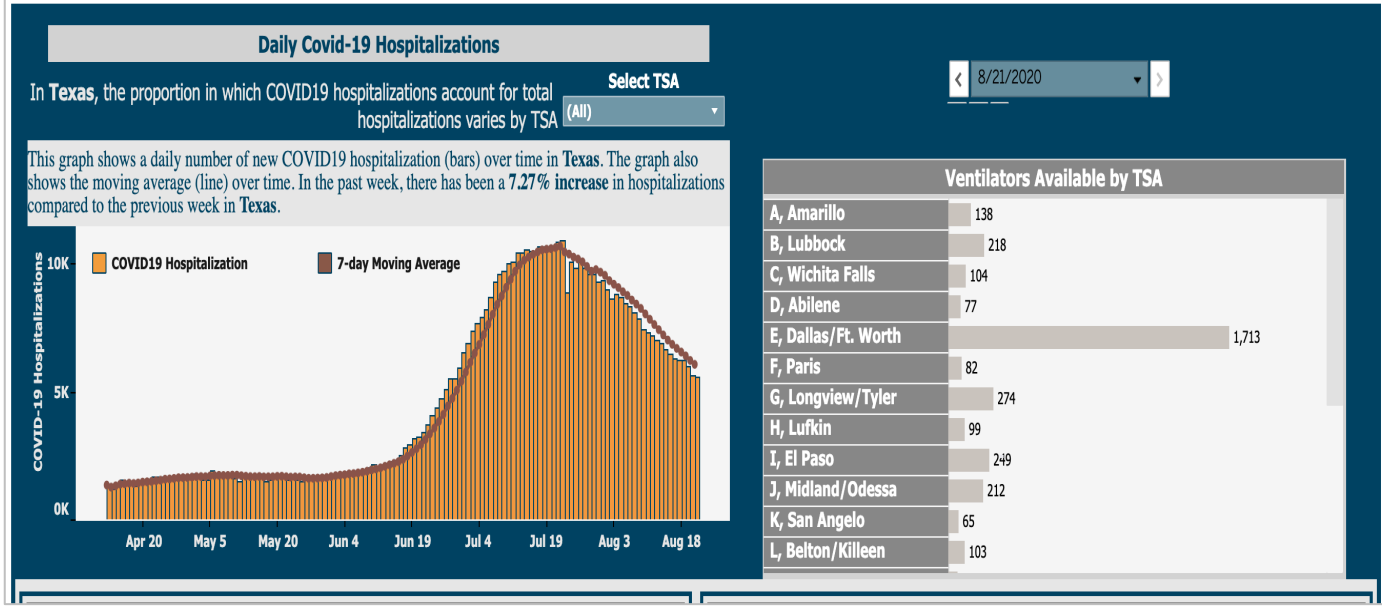
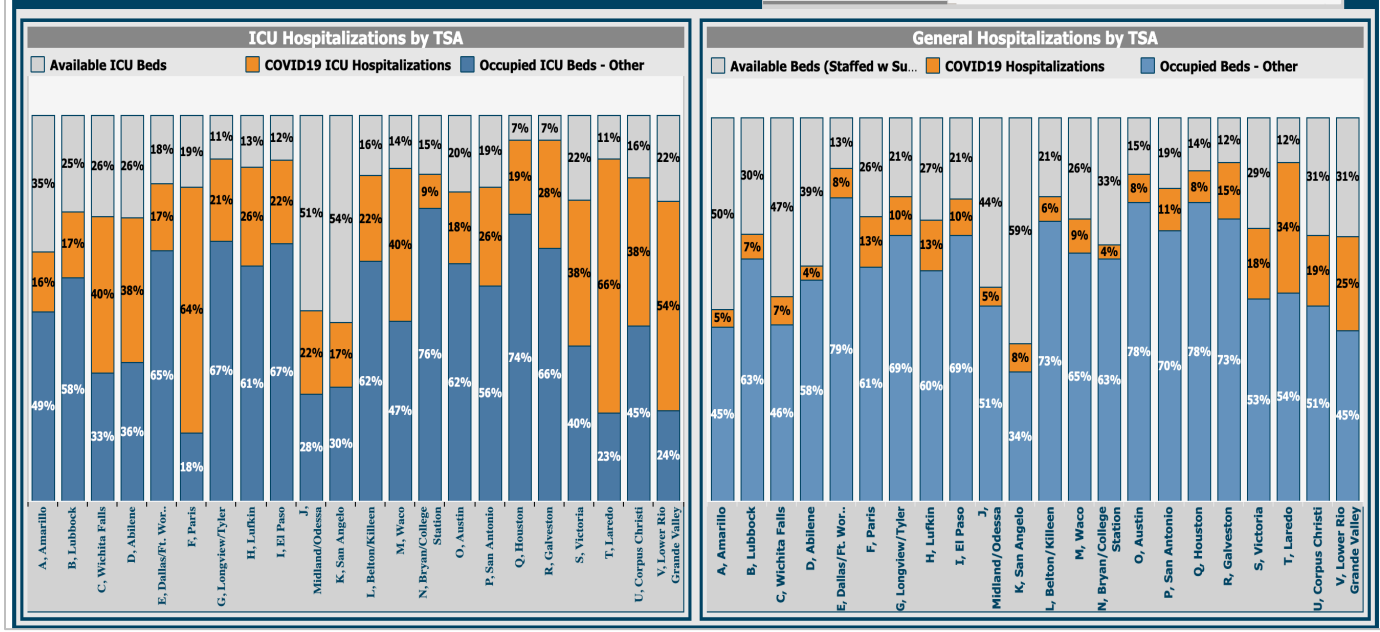
Hospital Capacity: 7 day moving average of hospitalizations and Ventilator capacity

www.texaspandemic.org



Hospitalizations across Texas increased rapidly after Phase 1 re-openings. Now stabilizing, albeit at levels still higher than those prior to re-opening

Hospital capacity by Trauma Service Area



SURVEILLANCE

COVID 19 Symptom Tracking – Why?

- There is an urgent need to capture in real-time “hot spots” of COVID symptoms among people to anticipate potential increases in community transmission

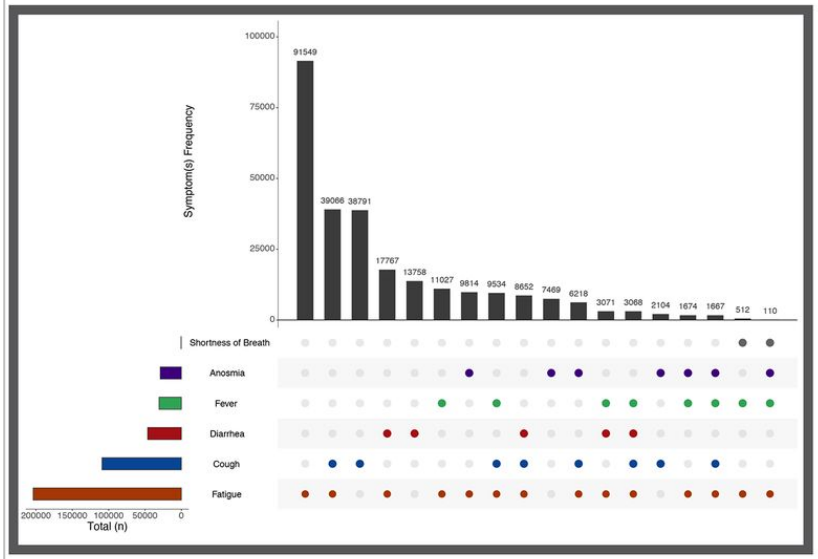
- This is critical because of:
  - the novelty of the virus
  - the speed at which the virus spreads between contacts
  - Existing surveillance for flu-like symptoms based on health care utilization is inconsistent

- Useful because ”hot spots” of symptoms occur almost 5-7 days prior to COVID infections (Drew et al., Science, 2020)

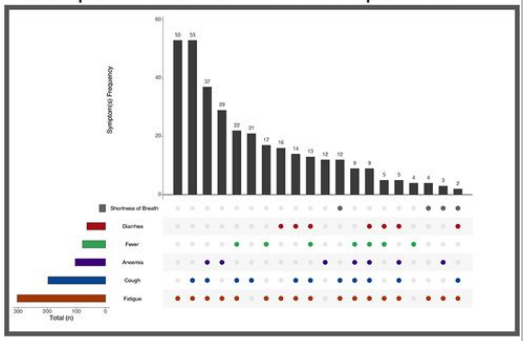
- We have an app that you can implement as part of “re-opening safely” strategy.

The symptoms tracked through the app predicted COVID cases 5 to 7 days ahead of diagnosis

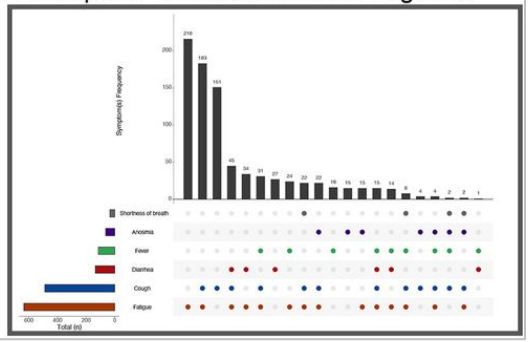
All participants who have reported any COVID-related symptoms



Participants who tested COVID positive



Participants who tested COVID negative



Drew et al., Science, 05 May 2020

COVID 19 Symptom Tracker App

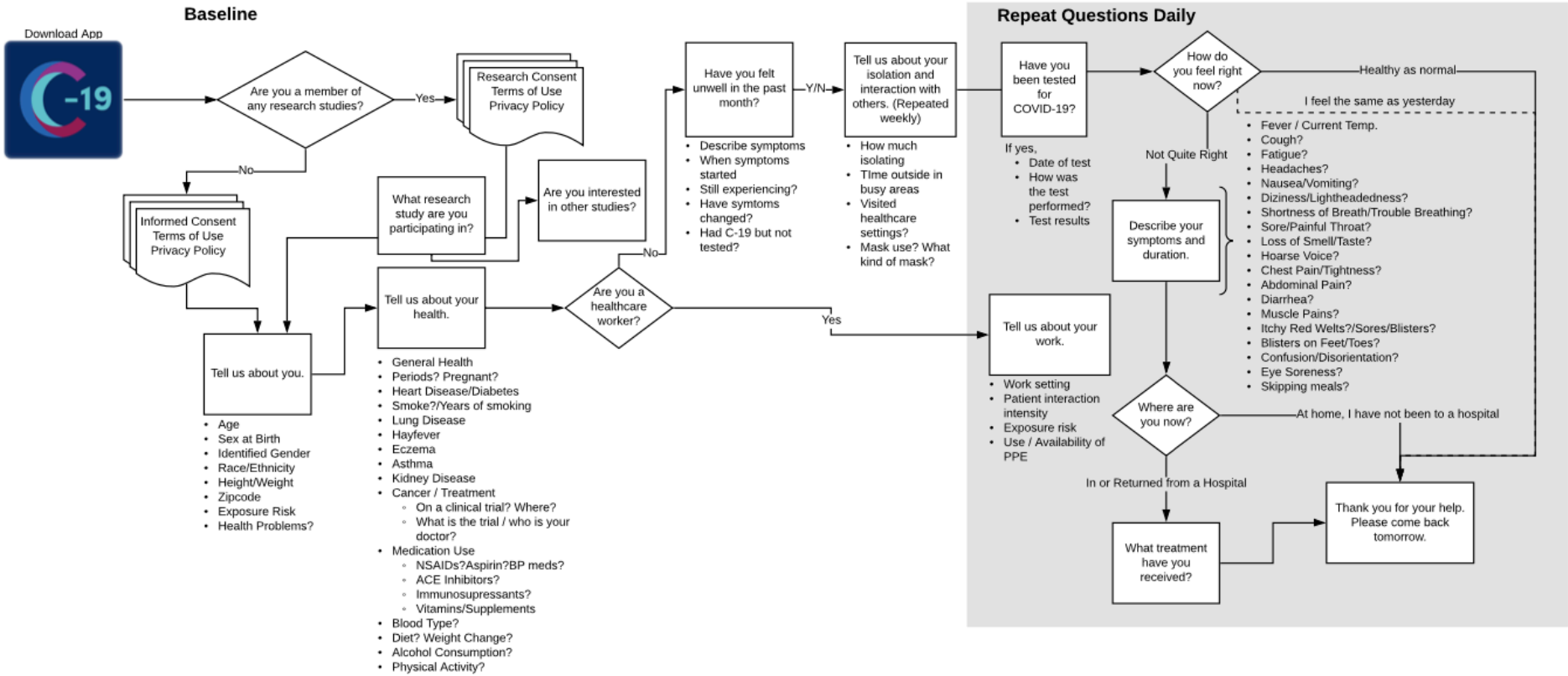
COVID Symptom Tracker

- Easy to use, free, secure app to track COVID 19 symptoms. Takes 1-3 minutes to complete. Includes informed consent (IRB approved). UTHealth will analyze de-identified data for Texas.
- Can be downloaded in the App store on the iphone or get it on Google Play
- For Apple: https://apps.apple.com/us/app/covid-symptom-tracker/id1503529611?ls=1
- ForAndroid/Google: https://play.google.com/store/apps/details?id=com.joinzoe.covid_zoe

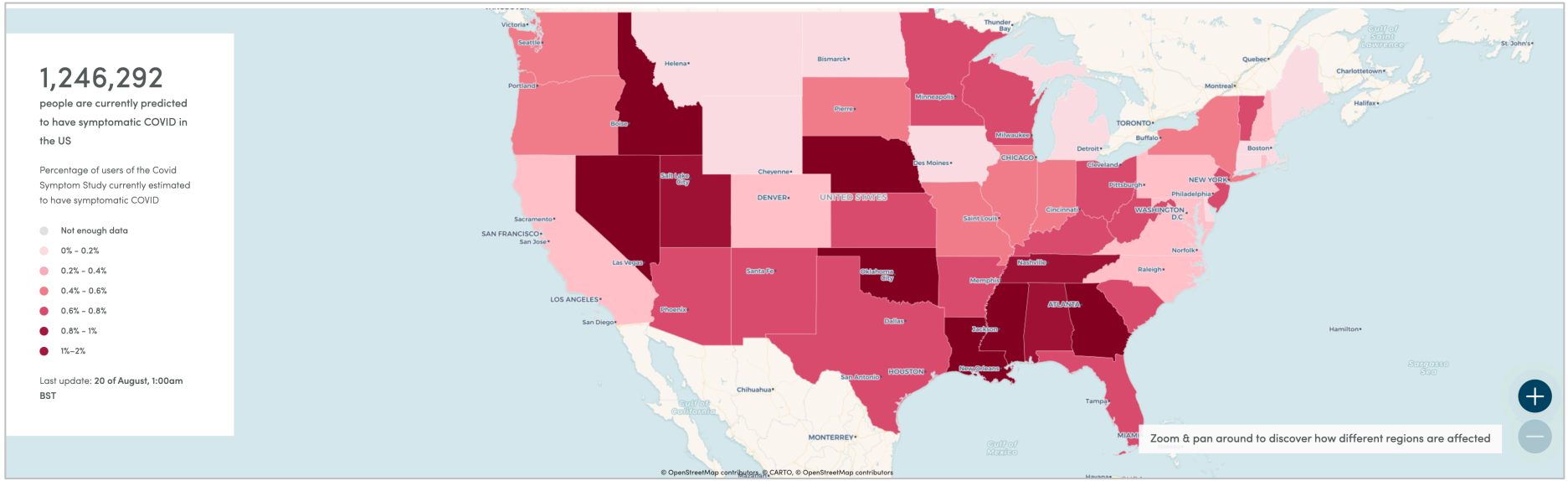
COVID 19 Symptom Tracking – How?

- Families use the app daily to record symptoms for all family members, even if they are well.
- Increased symptomatic activity for consecutive days indicate potential increase in COVID
  - Aggregate data available at zip code, city, county level
- If many people in a zip code report increasing levels of symptoms, schools and businesses in these areas could use this information to implement additional mitigation strategies.
- For more information go to: https://go.uth.edu/COVIDtracker or contact: Drs. Shreela Sharma and Bijal Bala at Shreela.V.Sharma@uth.tmc.edu and Bijal.A.Balasubramanian@uth.tmc.edu

COVID Symptom App Flow Diagram

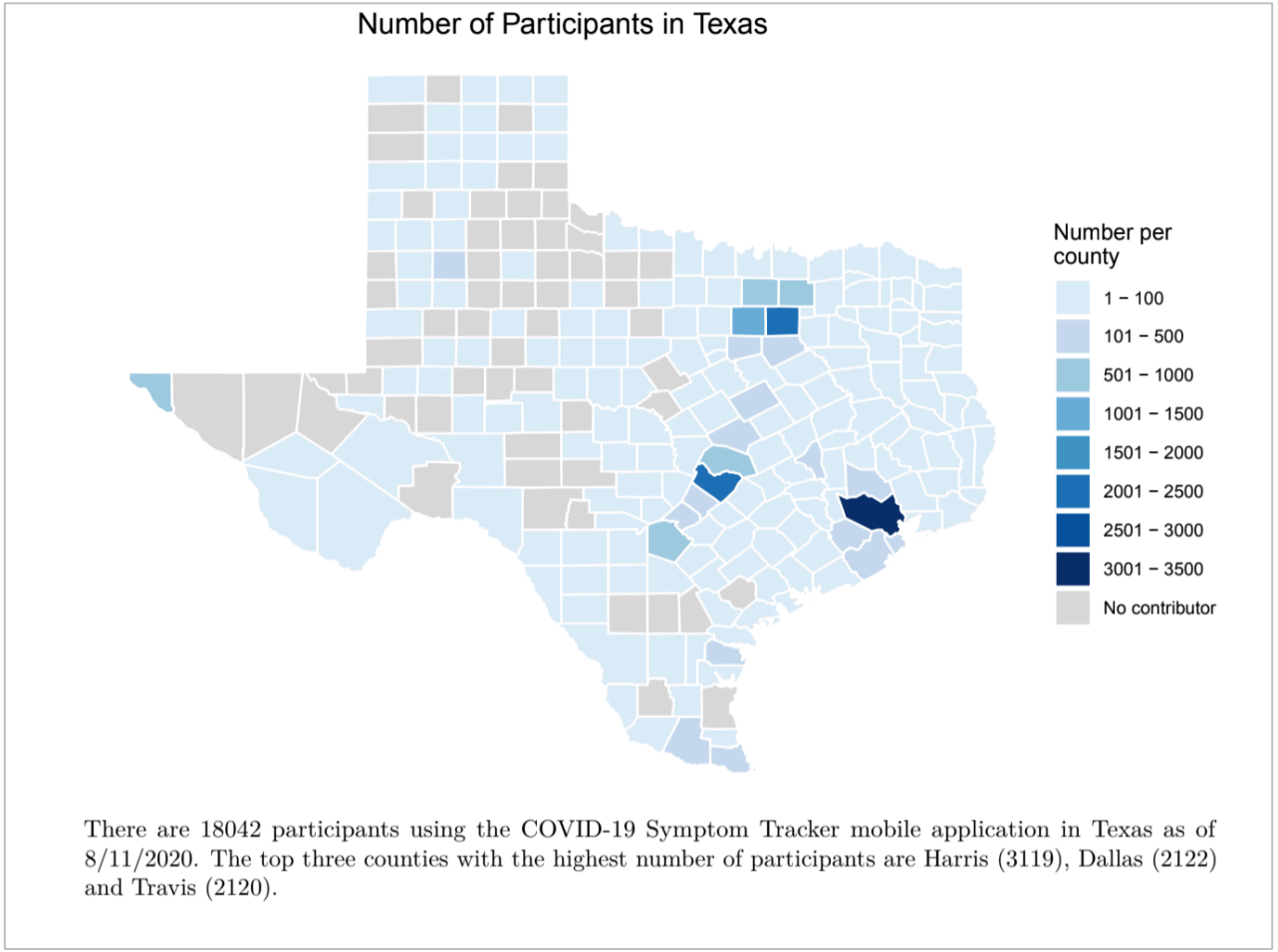


Symptomatic COVID amongst over a million US users - the largest community monitoring of COVID in the world.



COVID Symptom App Texas Users

18,042 users
64% women
14% Hispanic
3.5% Black



There are 18042 participants using the COVID-19 Symptom Tracker mobile application in Texas as of 8/11/2020. The top three counties with the highest number of participants are Harris (3119), Dallas (2122) and Travis (2120).

Challenges of Symptom Surveillance

- Challenges
  - Need rapid uptake of the app
  - Need representative populations
  - Need penetration within a zip code/region

- Strategies to Address Challenges
  - Leverage school networks
  - Leverage high school students to motivate families
  - Get buy in/participation of local health systems

Citizen Science Approach

4,108,658

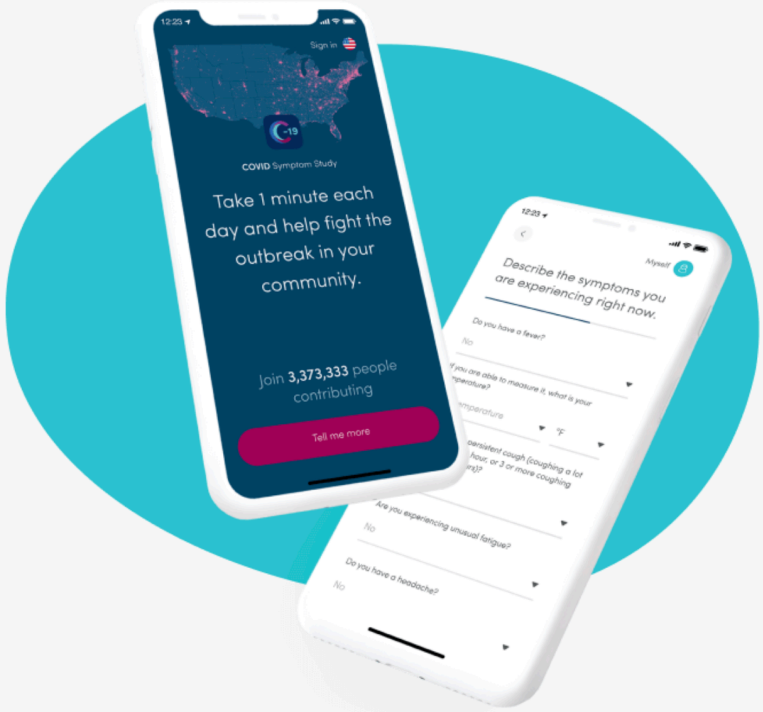
CONTRIBUTORS

People of all ages and backgrounds are joining together to fight COVID. Help scientific research to get us out of lockdown safely.

Take 1 minute each day and help fight the outbreak in your community

Download on the App Store

Get it on Google Play



UPCOMING CHALLENGES

Re-opening Schools

- The number and rate of cases in children in the United States have been steadily increasing from March to July 2020
- ~ 2,600 kids under age 19 years known to be positive for coronavirus
- Additional up to 45% could be asymptomatic but infected and transmit to others per other studies
- Rate of symptomatic infection increases with increasing age of the child. Middle and high schoolers seem to have a higher likelihood of being infected and symptomatic

https://jamanetwork.com/journals/jamapediatrics/fullarticle/2769634
https://www.cdc.gov/coronavirus/2019-ncov/hcp/pediatric-hcp.html

Until a COVID-19 vaccine or treatment is available, prevention and mitigation will be necessary

1. **Rule of Law:** Watch for executive orders at Federal, State, and County levels
2. **Rule of Science:** Watch the 7 to 14 day moving average reductions in cases and deaths per 1000/day **AND** (with sufficient testing) new cases (incidence rates)
3. **Rule of Place:** Don't permit exposure
   - ► Super spreading people:
     - Symptom screening, testing, contact tracing
     - Physical distancing, quarantine, recovery confirmation
   - ► Super spreading environments:
     - High density, high contact, high traffic
     - Surface and touchpoint cleaning and disinfection (see CDC guidance)
     - Passing objects (books, paper & pens, folders, toys, sports equipment, etc)

Planned response for school exposure/outbreaks that address closures, furloughs, cleaning, and disinfection

4. **Rule of People:** Strengthen training in personal protection actions
   - Encourage recommended sleep, Turn down the anxiety/stress
   - Ensure up to date vaccinations (including flu shot)
   - Social distance: with 6-foot bubbles, floor markings, desk arrangements
   - Hand washing & sanitizer stations in all rooms; Stock bathroom with soap/ & towels
   - Up-to-date PPE for staff; masks

5. **Rule of Policy:** Controls must be designed, implemented, monitored, and adapted
   - Distance learning, non-punitive sick/stay at home policies
   - Coordination between employer/schools, health care, and public health systems in the community
   - Maintain transparent communication between stakeholders - parents, faculty and staff, health care, and public health

Flu and COVID-19

- Flu season is around the corner
- Double whammy

Flu	COVID-19
Transmitted via respiratory droplets	Transmitted via respiratory droplets
Symptoms like COVID, peak 2-7 days	Symptoms like flu, peak 2-3 weeks
	Much more contagious than flu
Low fatality rate	Higher fatality rate
High risk for kids	Lower risk among kids
Vaccine and treatments available	No vaccine
Rapid, reliable test available	Inconsistent testing

CALL TO ACTION

Collective Responsibility

- Public
  - Wear masks
  - Physical distancing
  - Reduce movement outside the house as much as possible
  - Get vaccinated for the flu

- Public Health Authorities
  - Accurate and timely data on cases, deaths, TPR, hospitalizations at county level
  - Ramp up testing and contact tracing
  - Measure and report by race/ethnicity

- Public Health Researchers
  - Identify, implement, and evaluate strategies to:
    - Prevent spread
    - Monitor spread
    - Mitigate spread
  - Work closely with local and state public health officials

To summarize, thus far we have been playing catch up with COVID-19.

But now we need to get ahead of it. So that we can,

Detect early

Prevent the spread

Monitor over time

Make data-driven decisions for policy and planning

Prioritize – E.g. Opening schools over bars