

COVID-19 Patient Care at Houston Methodist

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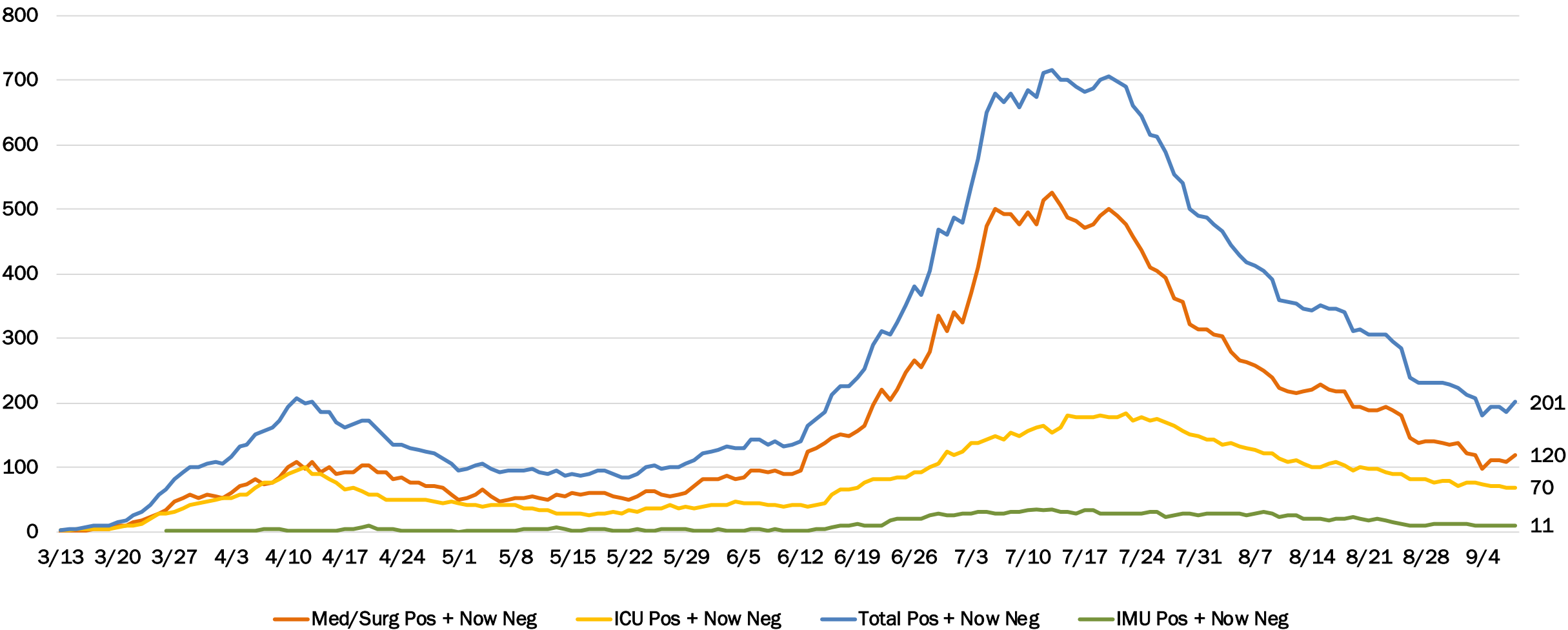
President and CEO



Houston Methodist COVID-19 Cases by Day



Houston Methodist COVID-19 Patients by Day



Outcomes and Characteristics

First Wave vs. Second Wave

Letters

RESEARCH LETTER

Characteristics and Outcomes of COVID-19 Patients During Initial Peak and Resurgence in the Houston Metropolitan Area

Texas is experiencing resurgence of coronavirus disease 2019 (COVID-19). We report sociodemographic, clinical, and outcome differences across the first and second surges of COVID-19 hospitalizations at Houston Methodist, an 8-hospital health care system in Houston, Texas.¹

Methods | From electronic health records, we identified patients with positive reverse transcriptase-polymerase chain reaction (RT-PCR) nasopharyngeal swab test results for severe acute respiratory syndrome coronavirus 2. We extracted age, sex, race/ethnicity, comorbidity, medication, intensive care unit (ICU) admission, and mortality information. The assessment of race/ethnicity was driven by prior analyses of our data that demonstrated higher SARS-CoV-2 infection rates among racial and ethnic minorities.² We tracked daily total, ICU, and non-ICU (medical/surgical units) hospital census across the reporting period. We categorized patients into surge 1 for admissions between March 13 and May 15, 2020, and surge 2 between May 16 and July 7, 2020. Surge 2 started 2 weeks after a phased statewide reopening.³

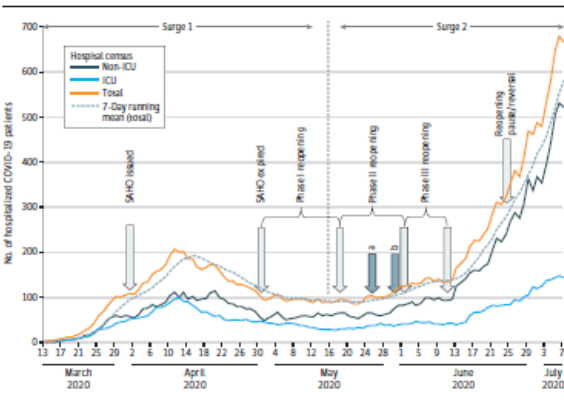
We provided summary statistics as means or medians and proportions for various sociodemographic, clinical, and outcome characteristics of hospitalized COVID-19

patients. Proportional differences with 95% CIs are provided for bivariable comparisons across surges 1 and 2. Extraction and reporting of these data were not deemed human subjects research by the Houston Methodist Institutional Review Board. Analyses were performed with Stata version 16. *P* values were 2 sided, with statistical significance set at *P* < .05.

Results | As of July 7, 2020, 2904 unique COVID-19 patients had been hospitalized, representing 774 and 2130 patients during surge 1 and 2, respectively. The **Figure** presents total, ICU, and non-ICU daily hospital census along with a 7-day mean across the study period. Dates corresponding to various phases of statewide reopening are also highlighted. Patients in surge 2 (vs surge 1) were younger (mean age, 57.3 vs 59.9 years; difference, -2.62 years; 95% CI, -4.04 to -1.20 years), the proportion identifying as Hispanic was higher (43.3% vs 25.7%; difference, 17.64%; 95% CI, 13.89%-28.79%), and the median zip code-based income was lower (\$60 765 vs \$65 805; difference, -\$5040; 95% CI, -\$7641 to -\$2439). Surge 2 patients had a significantly lower burden of overall and specific comorbidities such as diabetes, hypertension, and obesity (Table).

A greater proportion of surge 2 patients received remdesivir and enoxaparin. A smaller proportion of surge 2 patients were admitted to the ICU (20.1% vs 38.1%; difference, -18.07%; 95% CI, -21.89% to -14.25%). Length of hospital stay was less (4.8 vs 7.1 days; difference, -2.31 days; 95%

Figure. Daily Hospital Census of Total, Intensive Care Unit, and Non-Intensive Care Unit COVID-19 Patients Across Houston Methodist



Daily hospital census of coronavirus disease 2019 patients across all Houston Methodist hospitals is provided for total, intensive care unit (ICU), and medical/surgical (non-ICU) units. The dashed gray line represents a running 7-day mean total hospital census. SAHO indicates stay-at-home order. Various timeline markers correspond to statewide gubernatorial reopening plan: phase 1, opening of retail stores, malls, restaurants, and nail salons at 25% capacity; phase 2, opening of child care centers, massage parlors, youth clubs, bars, and nightclubs, with phase 1 reopening expanded to 50%; and phase 3, bars allowed to operate at 50% capacity.

* Memorial Day holiday weekend.

^a Large public rallies in Houston.

JAMA The Journal of the
American Medical Association

	Surge 1 3/13-5/15	Surge 2 5/16-7/7	P value
Average Age	59.9	57.3	<.001
Age ≤ 50	208 (26.9%)	736 (34.6%)	<.001
Hispanic / Latino	196 (25.7%)	910 (43.3%)	<.001
Self-Pay	88 (11.4%)	423 (19.9%)	<.001
Diabetes	312 (40.3%)	475 (32%)	<.001
Hypertension	427 (55.3%)	583 (38.8%)	<.001
Obesity (BMI≥30)	261 (33.9%)	383 (25.7%)	<.001

Treatment of COVID-19 with Convalescent Plasma Reveals Signals of Reduced Mortality

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Regular Article

Treatment of COVID-19 Patients with Convalescent Plasma Reveals a Signal of Significantly Decreased Mortality

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<https://doi.org/10.1016/j.ajpath.2020.08.001>

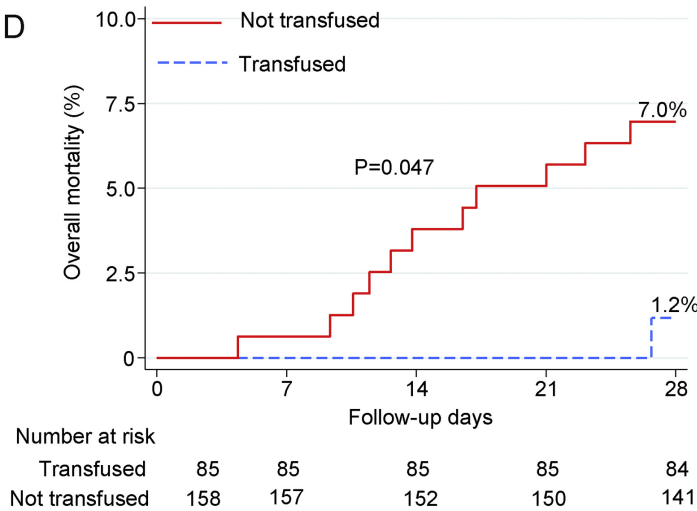
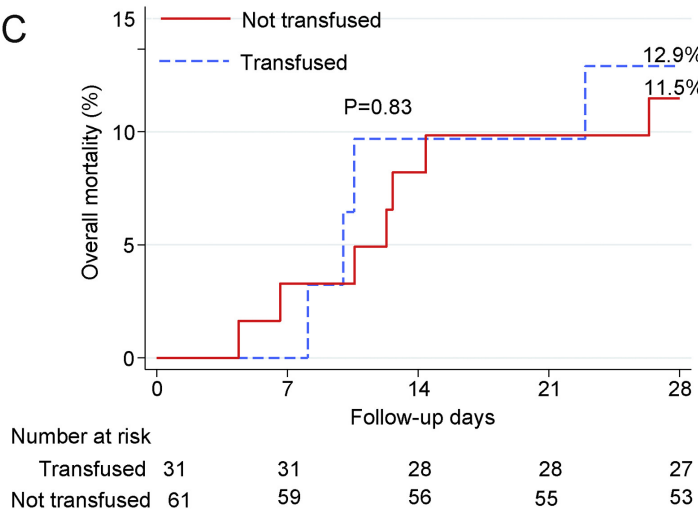
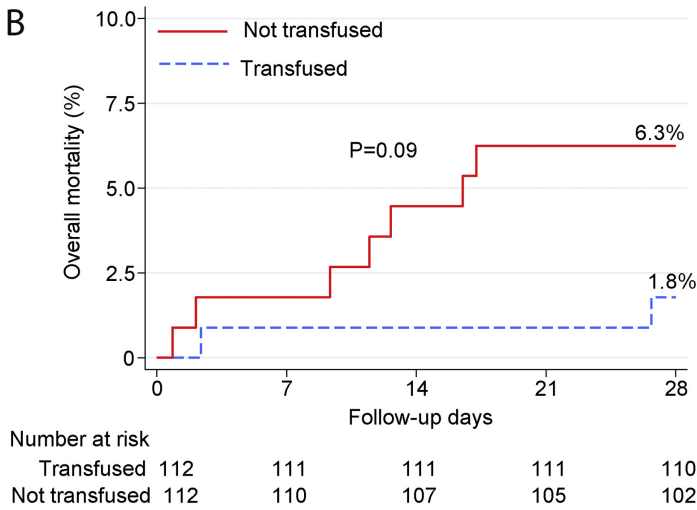
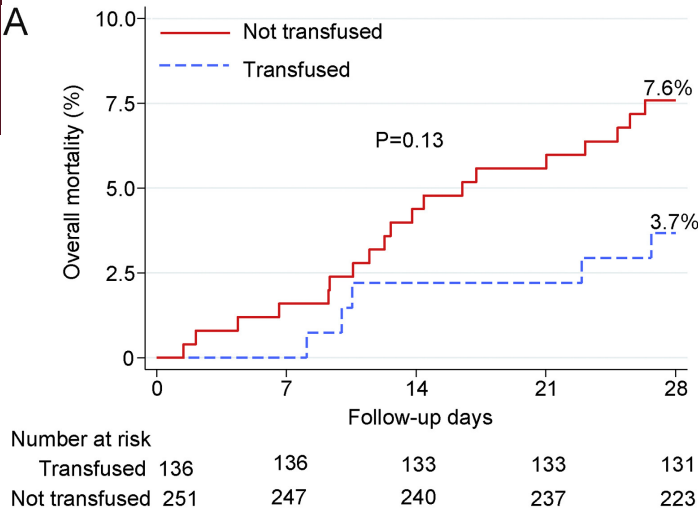
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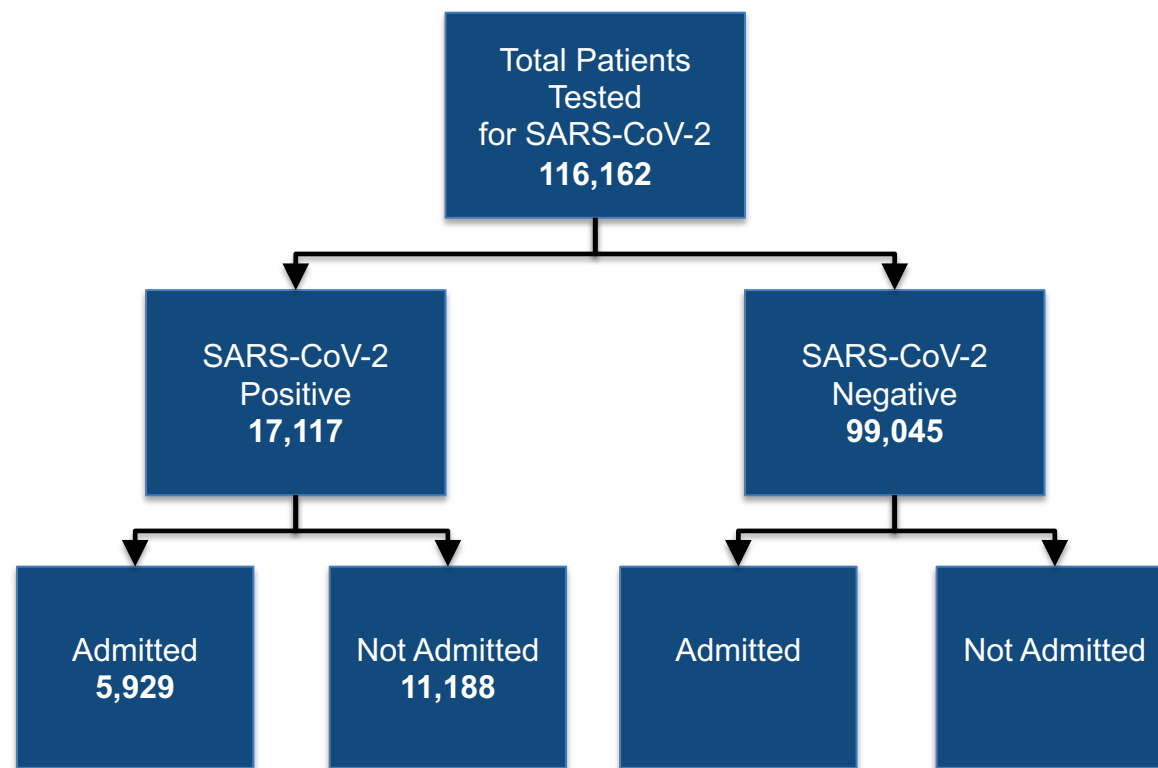
ABSTRACT

Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2, has spread globally, and proven treatments are limited. Transfusion of convalescent plasma collected from donors who have recovered from COVID-19 is among many approaches being studied as potentially efficacious therapy. We are conducting a prospective, propensity score-matched study assessing the efficacy of COVID-19 convalescent plasma transfusion versus standard of care as treatment for severe and/or critical COVID-19. We present here the results of an interim analysis of 316 patients (n=316) enrolled at Houston Methodist hospitals from March 28 to July 6, 2020. Of the 316 transfused patients, 136 met a 28-day outcome and were matched to 251 non-transfused control COVID-19 patients. Matching criteria included age, sex, BMI, comorbidities, and baseline ventilation requirement 48 h from admission, and in a second matching analysis, ventilation status at Day 0. Variability in the timing of transfusion relative to admission and titer of antibodies of plasma transfused allowed for analysis in specific matched cohorts. The analysis showed a significant reduction ($P = 0.047$) in mortality within 28 days, specifically in patients transfused within 72 h of admission with plasma with an anti-spike protein receptor binding domain titer of $\geq 1:1350$. These data suggest that treatment of COVID-19 with high anti-receptor binding domain (RBD) IgG titer convalescent plasma is efficacious in early-disease patients.



COVID-19 Surveillance & Outcomes Registry (CURATOR)

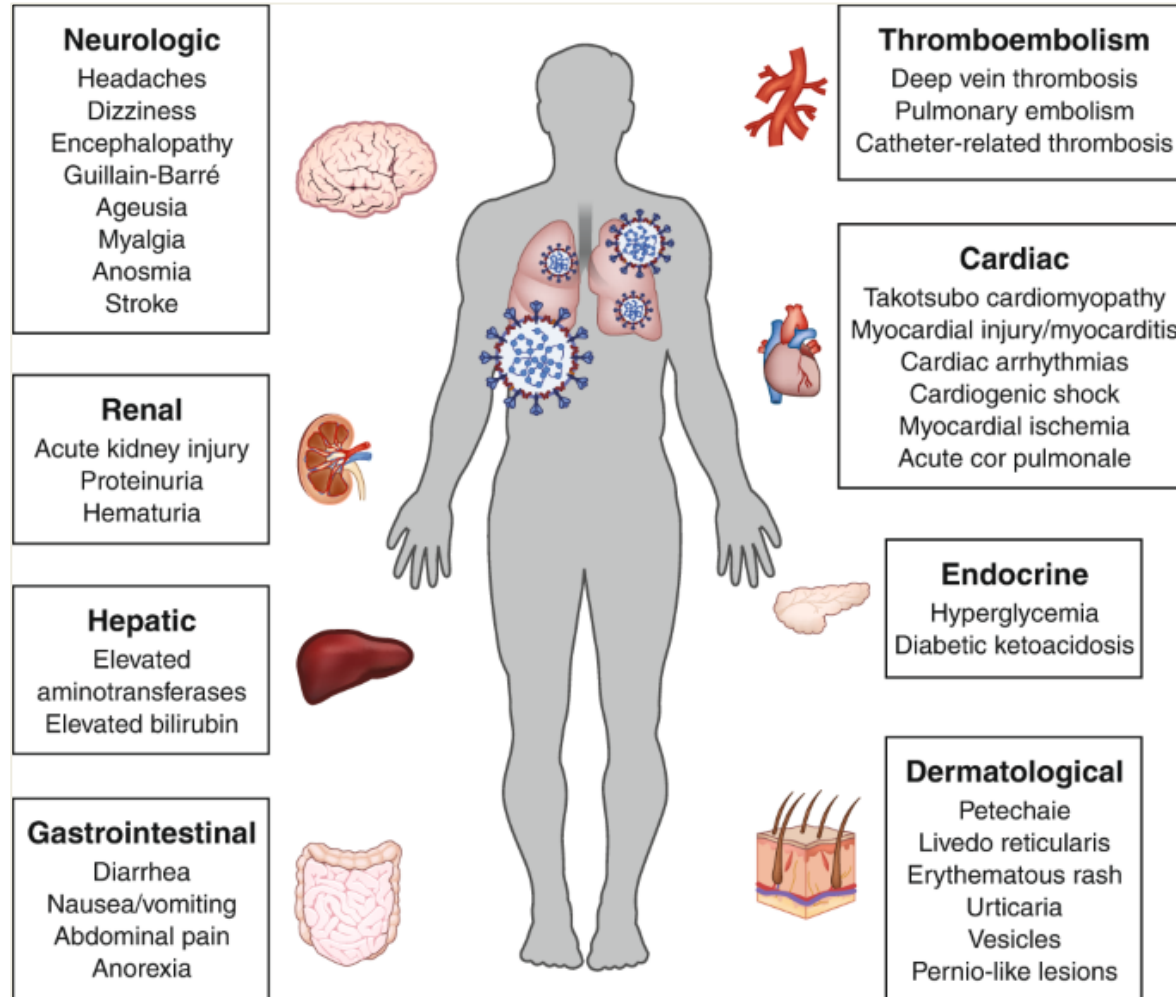
All Patients Tested for SARS-CoV-2 within Houston Methodist System
(Inpatient and Outpatient)



Data Elements

Demographics, Vitals, Lab Values, Medications, Procedures, Outcomes

Managing & Studying COVID-19 Recovery



INTEGRATED COVID CLINICAL AND RESEARCH PROGRAM

- **SURVEYS**
 - RECOVERY
 - SOCIAL DETERMINANTS OF HEALTH
 - QUALITY OF LIFE
- **COVID RECOVERY CLINIC**
 - LUNG FUNCTION
 - COGNITIVE TESTING
 - IMAGING (HEART/BRAIN)
- **BIOBANKING**

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