



Reference of the Week

- Loomba RS. Pediatric Intensive Care Unit Admissions for COVID-19: Insights Using State-Level Data. International Journal of Pediatrics. 2020. <https://www.hindawi.com/journals/ijpedi/2020/9680905/> pdf
Premise/Methods: **1.** The relative infrequency of COVID-19 positive admissions (CPA) to PICUs limits our understanding of risk factors and outcomes in children. **2.** Data was extracted from VPS (Virtual Pediatric System) which collects data from 167 PICUs in all but two states. **3.** Children population statistics were obtained from publically available data sets and a three tier data verification system was devised. **4.** The primary outcome of this study was to characterize CPA to PICUs throughout the country.
Findings: **1.** A total of 205 CPAs resulting in 1,132 PICU days were reported across 48 states and CPA frequency was estimated at 2.8 per million children. **2.** Respiratory support calculated as percent of days included: nasal cannula or room air 27.3%; high flow nasal cannula 11.6%; non-invasive positive pressure ventilation 7.3%; mechanical ventilation 52.2%; high frequency oscillation 0.8%; and ECMO 1.6%. **3.** Population density was associated with increased CPA frequency and type 1 diabetes was associated with the requirement and duration of advanced respiratory support. **4.** Inpatient mortality was 1.4% (3 patients). *The frequency of ICU requirement in children is dramatically different than that of adults and children admitted to a PICU for COVID-19 have at least a 20 fold reduction in mortality. A recent article exploring the mechanisms of reduced COVID-19 severity in children is available in the resource cabinet (pdf): Zimmerman P. Archives of Diseases in Childhood.*

Other References:

- Solnick RE. Emergency Physicians and Personal Narratives Improve the Perceived Effectiveness of COVID-19 Public Health Recommendations on Social Media: A Randomized Experiment. Academic Emergency Medicine. 12.02.2020. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/acem.14188> pdf
Premise/Methods: **1.** Public acceptance of COVID-19 mitigation measures has been incomplete. **2.** This study compares the perceived effectiveness of impersonal public health guidance versus personal ED physician narratives. **3.** A preregistered randomized experiment using simulated Twitter accounts and posts that randomly manipulated messenger type and message content was used with adults recruited through Lucid Theorem. **4.** To evaluate the effect of messages, we measured (1) perceived message effectiveness (**PME**), (2) perceived attitude effectiveness (**PAE**), and (3) behavioral outcomes: likelihood to share, write a letter to a governor.
Findings: **1.** 2,007 consented adults were randomized: mean age 45 years, 51% female, 10.6% Black, and 11.6% Hispanic. **2.** Participants rated PME, PAE and likelihood to share significantly higher in the physician/personal condition compared with the federal/impersonal condition, with largest effect on PME. **3.** These findings suggest that emergency physicians sharing personal stories on social media may be more effective in increasing general adherence to public health guidelines than federal officials sharing impersonal messages. **4.** There was no impact on letter writing to the governor nor pledging to stay at home. *We live in an age of misinformation, government suspicion, and mistrust of science. Creating an effective means to communicate public health directives is crucial. It appears that story-telling by physicians on social media may be more effective than traditional means.*
- Butler SM. Four COVID-19 Lessons for Achieving Health Equity. JAMA Forum. 12.08.2020 <https://jamanetwork.com/channels/health-forum/fullarticle/2772835>



Premise: **1.** COVID-19 has exposed poorer underlying health, housing, job conditions, and inequitable distribution of health resources and persistent gaps in insurance coverage among minority groups.

Recommendations: **1.** Underserved communities require local healthcare resources to offset travel costs and thereby improving compliance and building trust in medical care. **2.** Improving interracial communication requires tactics that include: teaching communication skills, employing intermediaries to serve as advocates and cultural translators, and climbing into trusted community establishments to reinforce healthcare messaging.



3. Strengthen the caregiving workforce for older adults by improving work conditions, salaries, and career advancement through education. 4. Disconnect health insurance from employment as the workforce of part-time workers, contracted employment, gig workers, seasonal, and many retail positions do not offer healthcare insurance as a benefit. The rate of uninsurance is highest among groups, such as Black and Latino individuals, whose employment often does not provide affordable employer-sponsored insurance.

- Kalil AC. Baricitinib plus Remdesivir for Hospitalized Adults with Covid-19. NEJM. 12.11.2020.

<https://www.nejm.org/doi/full/10.1056/NEJMoa2031994?query=RP> pdf

Premise/Methods: 1. ACTT-2 (Adaptive Coronavirus Treatment Trial-2) compared Remdesivir (REM) alone versus Remdesivir plus Baricitinib (REM+BAR) (baricitinib is an oral Janus kinase inhibitor) which was FDA approved for COVID-19 on November 19th via an EUA through an international RCT (67 sites in 8 countries). 2. The primary outcome was time to recovery; key secondary outcome was clinical status at day 15; and multiple additional secondary outcomes including the incidence and duration of new use of oxygen, new use of noninvasive ventilation or high-flow oxygen, and new use of invasive ventilation or ECMO.

Findings: 1. 1,033 adults were randomized. 2. REM+BAR patients had an improved median time to recovery 1 day. 2. Patients receiving high-flow oxygen or non-invasive ventilation at enrollment had a time to recovery of 10 days with combination treatment versus 18 days with control. 3. The study was not powered for mortality but the 28-day mortality was 5.1% in the combination group and 7.8% in the control group suggesting possible mortality benefit. 4. The incidence of new use of oxygen was lower in the combination group than in the control group (22.9% vs. 40.3%; difference, -17.4 percentage points; 95% CI, -31.6 to -2.1), as was the incidence of new use of mechanical ventilation or ECMO.

The interventions for COVID-19 continue to expand. There are now therapies for outpatient, early inpatient, and more severe inpatient COVID-19 patients all of which are important in limiting the crush on hospital and ICU resources.

- Wang QQ. Analyses of Risk, Racial Disparity, and Outcomes Among US Patients With Cancer and COVID-19 Infection. JAMA oncology. 12.10.2020. <https://jamanetwork.com/journals/jamaoncology/fullarticle/2773500> pdf

Premise/Methods: 1. Cancer patients have weakened immune systems and adults often have comorbidities yet there is limited data on the risk, racial disparity, susceptibility, and outcomes for COVID-19 illness in patients with cancer. 2. This is a retrospective case-control study using US electronic health record data collected by IBM Watson Health Explorys. 3. 13 common cancer types were assessed with patients divided into two cohorts: 1) cancer diagnosis < 1 year; and 2) cancer diagnosis ≥ 1 year. 4. Analysis was adjusted for a variety of variables including age, sex, and race.

Findings: 1. Among 73,449,510 patients (those with known data, 53.64% female and 45.67% male), 2,523,920 had at least 1 of the 13 common cancers diagnosed (all cancer diagnosed within or before the last year), and 273,140 had recent cancer (cancer diagnosed within the last year). 2. Among 16,570 patients diagnosed with COVID-19, 1200 had a cancer diagnosis and 690 had a recent cancer diagnosis. 3. Patients with cancer had a significantly increased risk for COVID-19 infection compared with patients without cancer with the stronger effect for recent cancer. 4. Disparity: African Americans with cancer were more likely to be infected with COVID-19; African Americans with recent cancer were more likely to be hospitalized with COVID-19; African American cancer patients without COVID-19 had a higher mortality rate but those with cancer and COVID-19 had a similar mortality rate.

Short of death, African Americans with cancer disproportionately struggle with COVID-19 compared to white patients consistent with reports of non-cancer patients. The mortality rate for COVID-19 and cancer, is three times higher than hospitalized COVID-19 patients without cancer.

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