

**Conclusion:** Mortality in our HIV COVID-19 population was 18%, significantly lower than the 33% in COVID-19 patients overall at our institution. 39 patients with HIV were admitted for confirmed COVID-19 infections, which only amounts to 6.5% of the DAC population, although it is possible that our patients were admitted to other facilities for COVID-19. In our patients, compliance, viral suppression, and CD4+ counts did not correlate with outcomes. Although our mortality was significantly lower than the overall hospital mortality, larger studies are needed to fully evaluate the mortality relationship and determine the protective effects of antiviral therapy and/or decreased immune response in HIV patients with COVID-19.

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## 526. Clinical Presenting Characteristics of Pediatric COVID-19 Infection in a Tertiary Care Children's Hospital in Detroit

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**Session:** P-20. COVID-19 Special Populations

**Background:** There is limited data regarding the presenting clinical characteristics of COVID-19 in children. Our objective is to describe the clinical presentations and outcomes of COVID-19 infection early in the pandemic at our institution.

**Methods:** We performed a retrospective chart review of children up to 18 years who underwent testing for SARS CoV-2 from March 1<sup>st</sup> to May 10<sup>th</sup> 2020 at our pediatric emergency department. We abstracted patient's demographics, clinical presentation, diagnostic studies and patient disposition. We classified the severity of clinical illness based on published criteria. We excluded patients diagnosed with Multisystem Inflammatory Syndrome in Children (MIS-C) associated with COVID-19.

**Results:** SARS CoV-2 testing was performed on 481 patients of whom 43 (8.9%) tested positive. Of these, 4 were diagnosed with MIS-C. Data of 39 patients were analyzed. Patients' demographics, co-morbidities, presenting signs and symptoms and disposition are shown in Table 1. Age range was 47 days – 18 years. Infants representing one third (14/39; 35.9%) of our study cohort. There was equal sex distribution. Asthma or obesity was present in 17 (44%). The most common presenting symptoms included fever, cough, shortness of breath and diarrhea. Chest radiograph showed pneumonia in 12 (30.8%) patients. Two thirds (27/39; 69.2%) were asymptomatic or had mild disease; six patients (15.4%) had severe or critical illness (Figure 1). Nineteen (48%) patients were admitted to the general pediatric service. Eleven (28%) were admitted to the Intensive Care Units (ICU). The characteristics, presenting symptoms and interventions performed in the PICU cohort are shown in Table 2. Half of these patients required mechanical ventilation. There was one death in a 3 month old infant unrelated to SARS CoV-2. Majority of the infants required hospitalization (12/14; 85.7%), including 4 to the PICU (one each for non accidental trauma, ingestion, seizure and pneumonia).

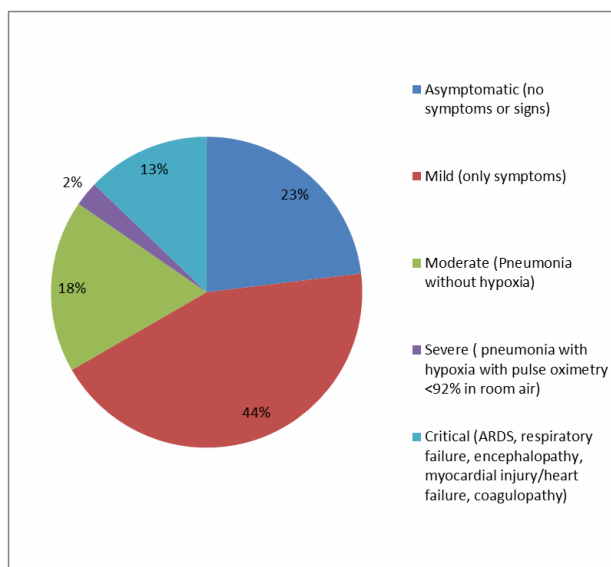
Table 1. Patient demographics, signs and symptoms of COVID-19 infection in Children

Characteristics	
Age (Median, IQR)	7.5(14.3)
Age Range	47. days -18 years
Age Group	
<1 year	14 (35.9%)
1 – 4 years	4 (10.3%)
5- 9 years	3 (7.7%)
10 -14 years	8 (20.5%)
15 -18 years	10 (25.6%)
Gender	
Male	20 (51.3%)
Female	19 (48.7%)
Co Morbidity , yes	17 (43.6%)
Asthma	8
Obesity	5
Ppresenting symptoms and signs	
Fever	65.2%
Cough	60.1%
Shortness of Breath	37.0%
Myalgia	15.2%
Abdominal pain/ Vomiting	15.2%
Diarrhea	17.4%
Hypoxia	19.6%
PED Disposition	
Discharged home	9 (23.1%)
Floor admission	19 (48.7%)
PICU admission	10 (25.6%)
NICU admission	1 (2.6%)

Table 2: PICU patients: Characteristics, Interventions and pharmacotherapy

Characteristic	Number (%)
Age (Median, IQR)	13 (16.6%)
Gender	
Male	6 (60%)
Female	4 (40%)
Presenting Complaint	
Respiratory	6(60%)
Seizure	1 (10%)
Ingestion	2 (20%)
Non – Accidental Trauma	1 (10%)
Co morbidity	
Asthma	5 (50%)
Obesity	5 (50%)
Interventions	
Vasoactive support	2(20%)
High flow oxygen therapy	1 (10%)
Mechanical Ventilation	5 (50%)
Cardiopulmonary Resuscitation	1 (10%)
Pharmacotherapy	
Hydroxychloroquine	3 (30%)
Remdesivir	4 (40%)
Steroids	5 (50%)
Azithromycin	3 (30%)

Figure 1: Severity of Illness in the study cohort



**Conclusion:** Majority (17; 43%) of our children with COVID-19 had a mild disease. Eleven (28%) including 4 infants required critical care; 5 required mechanical ventilation. There was no COVID-19 related mortality. Larger studies are needed to further define the spectrum of COVID-19 and risk factors associated with severe disease in children.

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## 527. Corona Virus Disease-19 (COVID-19) in a Veterans Affairs Hospital at Suffolk County, Long Island, New York

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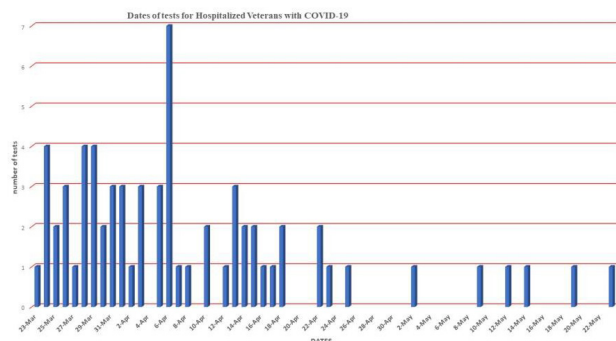
**Background:** The area of New York was hit hard by the COVID 19 pandemic with Suffolk county in Long Island numbering >40 thousand cases and 1900 deaths by the end of May 2020. The Veterans Affairs Medical Center (VAMC) at Northport NY serves over 30000 Veterans. We report our institution's experience during the COVID 19 outbreak

**Methods:** Retrospective chart review of hospitalized Veterans (VETS) with COVID-19 from March 1<sup>st</sup> to May 31<sup>st</sup> 2020 at Northport VAMC

**Results:** A total of 141 VETS had laboratory confirmed SARS-CoV-2 infection, 67 got hospitalized, and 20/67 died. The median age of the hospitalized cohort was 73 years (33 to 94). Figure 1 shows the dates of tests, Tables 1 & 2 summarize the demographic characteristics, medical history and laboratory findings. No co-infection with

influenza or other respiratory viruses were identified. The deceased group was older 77.5 vs 71 years  $P = 0.007$ , had lower oxygen saturation and higher respiratory rate on presentation, had longer length of stay  $P = 0.091$ , more likely to be in ICU and intubated, had lower bicarbonate levels, higher SAPS  $P < 0.001$ , higher lactate dehydrogenase, blood urea nitrogen, potassium levels, and higher peak procalcitonin, CRP, ferritin, ESR levels. There was no difference between recovered and deceased in terms of comorbidities except atrial fibrillation. Also, no difference in use of ACE inhibitors, statins, famotidine, hydroxychloroquine (HCQ), azithromycin, doxycycline, steroids. Beta lactam antibiotics and tocilizumab were given more in the deceased group. HCQ was stopped in 1 patient due to QTc prolongation. No bacteremia identified in the recovered group contrary to two occasions in the deceased, *E. faecalis* and *S. mitis*. Six pneumonias in intubated deceased patients were identified (3 had received steroids and one tocilizumab) and 4 in recovered (2 intubated/steroids and 1 tocilizumab). 12 recovered patients had persistent positive nasopharyngeal PCR for SARS-CoV-2 for average 29 days (14 to 79 days), and 4 of them were checked and had detectable IgG antibody

#### Dates of Tests for Hospitalized Veterans with COVID-19



#### Comparison of Demographic Data and Comorbidities in Recovered vs Deceased Hospitalized Veterans with COVID - 19

	COVID-19 RECOVERED N=47	COVID-19 DECEASED N=20	P value
Median Age years (range)	71 (33 to 92)	77.5 (55 to 94)	0.007
Men #	46	20	
Caucasian # (%)	25 (53%)	15 (75%)	0.111
Black # (%)	16 (34%)	5 (25%)	0.571
Hispanic # (%)	6 (13%)	0	
Cough, #	25	12	0.789
Dyspnea, #	30	11	0.587
Median Temp °F (range)	100.1 (95.5 to 103.2)	99.9 (98.1 to 104)	0.783
Median SBP mmHg, (range)	125 (77 to 192)	123 (74 to 174)	0.563
Median Heart Rate bpm, (range)	96 (65 to 151)	99 (53 to 130)	0.747
Median Respiratory rate breaths/min	20 (16 to 38)	22 (18 to 39)	0.021
BMI (range)	30 (21 to 48)	28.5 (16 to 47)	0.577
Oxygen saturation on Room Air, %	92 (82 to 98)	88 (70 to 97)	0.014
Diabetes, # (%)	19 (41%)	10 (50%)	0.594
Hypertension, # (%)	36 (76%)	16 (80%)	1.000
CHF, # (%)	5 (11%)	4 (20%)	0.436
COPD, # (%)	11 (24%)	6 (30%)	0.760
CAD, # (%)	13 (28%)	10 (50%)	0.101
Hemodialysis, # (%)	3 (6%)	3 (15%)	0.357
Atrial fibrillation, # (%)	5 (11%)	8 (40%)	0.015
Active malignancy	1. Chronic lymphocytic leukemia	2. Lung cancer on chemotherapy 3. Metastatic prostate cancer	
# of influenza tests, viral panels, result	16, 8, Negative	9, 3, Negative	
Length of stay (days)	7.5 (2 to 34)	11 (1 to 32)	0.091
# with ICU stay	10	11	0.009
# of intubated,	5	10	<0.001
LOS ICU days	6 (1 to 18)	6 (1 to 26)	0.547
Median days of mechanical ventilation	8 (6 to 13)	8 (1 to 26)	0.896
Hydroxychloroquine, #	35	17	0.523
Azithromycin, #	22	9	1.000
Doxycycline, #	8	6	0.325
Beta lactam antibiotics, #	19	15	0.015
Steroids given, #	8	7	0.121
History of ACEI/ARB use	13	7	0.571
History of Statin use	26	13	0.591
History of proton pump therapy	12	4	0.756
History of famotidine use	2	1	1.000
Tocilizumab	1	3	0.076
Convalescent serum therapy	2	2	0.574
Remdesivir	1	0	
Median QTc msec	454 (386 to 612)	446 (387 to 562)	0.465
Abnormal Chest Imaging (CXR or CT), #	40	19	0.420

Adm admission, ACEI ace inhibitor, ARB angiotensin receptor blocker, BMI body mass index, CAD coronary artery disease, CHF congestive heart failure, CXR chest x-ray, CT computed tomography, COPD chronic obstructive lung disease, CRP C-reactive protein, LDH lactate dehydrogenase, LOS length of stay, msec milliseconds, SBP systolic blood pressure

#### Comparison of Laboratory Data in Recovered vs Deceased Hospitalized Veterans with COVID - 19

	COVID-19 Recovered N=47	COVID-19 Deceased N=20	P value
Median SAPS II score	28	47	<0.001
Median D-dimer on adm ng/mL	354 (<150 to 31344)	542 (208 to 29009)	0.949
Median PEAK D-Dimer	480 (<150 to 38977)	2465 (431 to 34006)	0.299
Median Procalcitonin on adm	0.12	0.2	0.136
Median PEAK Procalcitonin ng/ml	0.18	2.585	0.010
Median CRP mg/L on Adm	71	89	0.340
Median PEAK CRP	112	202	0.002
Median Ferritin on Adm ng/mL	387	652	0.049
Median PEAK Ferritin	527	1500	<0.001
Median White Blood Cells/mm3	5.4 (2.4 to 29.6)	5.1 (2.2 to 13.3)	0.315
Median Absolute Lymphocytes	1.0 (0.5 to 13.4)	0.7 (0.3 to 1.7)	0.227
Median Serum Creatinine mg/dL	1.1 (0.6 to 12.1)	1.45 (0.9 to 14.7)	0.057
Median BUN mg/dL	18 (5 to 142)	36.5 (9 to 76)	0.037
Median Potassium mmol/L	4.0 (2.8 to 5.2)	4.2 (2.7 to 6.1)	0.025
Median LDH IU/L	259 (109 to 601)	290 (169 to 1693)	0.021
Median ALT IU/L	31 (5 to 187)	32 (12 to 269)	0.093
Median Total Bilirubin mg/dL	0.8 (0.2 to 2.3)	0.8 (0.3 to 3.6)	0.669
Median Bicarbonate mmol/L	24 (18 to 33)	21.5 (16 to 28)	0.009
Median ESR on Admission mm/hr	52 (4 to 121)	53 (22 to 120)	0.410
Median PEAK ESR mm/hr	69 (10 to 150)	98 (43 to 150)	0.041
Median IL-6 Level pg/mL	40.6 (8 to 341.7)	48.5 (5.8 to 384)	0.803
Median BNP pg/mL	70 (15 to 1574)	103 (10 to 744)	0.597
BLOOD TYPES:			
O POSITIVE	9	6	
O NEGATIVE	3	1	
A POSITIVE	6	3	
A NEGATIVE	1	0	
B POSITIVE	3	1	
B NEGATIVE	0	0	
AB POSITIVE	2	1	
AB NEGATIVE	0	0	
UNKNOWN	23	8	
BACTEREMIAS			
	None	1. <i>E. faecalis</i> (S to Ampicillin) 2. <i>S. mitis</i> 3. MRSE (contaminant)	
Sputum Cultures			
(treated for pneumonia)	a. <i>H. influenzae</i> b. MRSA c. <i>K. aerogenes</i> d. <i>P. aeruginosa</i>	1. <i>S. marcescens</i> (R to cefazolin) 2. MRSA (two patients)* 3. MRSA 4. <i>P. aeruginosa</i> (two patients)* 5. <i>K. aerogenes</i> (R to cefazolin) 6. <i>E. cloacae</i> (R to cefazolin)†	
		*. # coinfections	

SAPS simplified acute physiologic score, BNP beta natriuretic peptide, CRP C-reactive protein, ESR erythrocyte sedimentation rate, LDH lactate dehydrogenase, ALT alanine aminotransferase, MRSE methicillin resistant *S. epidermidis*, R Resistant

**Conclusion:** The inpatient mortality of hospitalized VETS with COVID-19 in our institution was 30%. Mortality was associated with older age. Ongoing monitoring of outcomes in hospitalized patients will be important to understand the evolving epidemiology of COVID-19 among US VETS.

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**528. Coronavirus Disease 2019 in Children Cared for at Texas Children's Hospital: Implications of Repeat Testing on Infection Control Strategies**  
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**Session:** P-20. COVID-19 Special Populations

**Background:** Accurate diagnosis of coronavirus disease 2019 (COVID-19) is key for source control and interrupting disease transmission. To better understand the length of viral shedding in children and potential infection control implications, we describe 51 children with COVID-19 who underwent repeat testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) at Texas Children's Hospital (TCH).

**Methods:** We performed a retrospective chart review of all pediatric patients (< 21 years of age) with ≥ 2 nasopharyngeal specimens tested for SARS-CoV-2 by reverse transcription-polymerase chain reaction (rt-PCR) and at least one positive result between 3/13/2020 and 6/7/2020 through the TCH Molecular Microbiology Laboratory.

**Results:** Fifty-one patients met inclusion criteria. The median age was 8.6 years (0.02–19.2 years). Sixteen (31%) children were hospitalized. Fourteen (27%) patients underwent testing for surveillance purposes (including 3 admitted patients). Two SARS-CoV-2 tests were performed in 25 (49%) children; while 12 (24%) children had 3 tests, 4 (8%) children had 4 tests, and 10 (20%) children had ≥ 5 tests (including 1 patient with underlying malignancy who had 9 SARS-CoV-2 PCRs performed). SARS-CoV-2 testing timeline for 9 hospitalized children is shown (Fig 1). The median time between collection of tests 1 and 2 was 14 days (n=51, range 1, 53 days). For children with conversion (first detected to first not-detected sample), the median time was 15 days (n=31, range 1, 45 days). For patients with consecutive positive SARS-CoV-2 PCRs, the median time of positivity was 10 days (n=19, range 2, 31). One patient with malignancy had 5 tests over 6 weeks in the outpatient setting and each time alternated between detected and not-detected. Following diagnosis with COVID-19, one patient with sickle cell disease likely had re-infection and had a positive test after having 2 consecutive negative tests; his last SARS-CoV-2 rt-PCR was positive 68 days after initial positive.