

**56. Could Maturation Effect Contribute to In-hospital Mortality Improvement During COVID-19 Pandemic?**

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**Background:** The surge of COVID-19 cases overwhelms hospital systems necessitating rapid learning of the disease process and management. During the course of a novel pandemic, multiple interventions are rapidly implemented to improve patient outcomes. When evaluating efficacy of individual interventions, one should account for the simultaneous improvements in knowledge and experience of healthcare providers (HCP), known as the maturation effect. We hypothesized that multiple processes rapidly implemented, along with the maturation effect would result in improved survival of COVID-19 patients hospitalized over the course of the pandemic.

**Methods:** This retrospective study was done at Henry Ford Hospital (HFH), a 900-bed tertiary care facility in Detroit, Michigan. The first COVID-19 patient was hospitalized on March 10, 2020 followed by a rapid surge of cases. We evaluated the trends of in-hospital case fatality rate of COVID-19 PCR positive patients through April 28, 2020. Time-points of sequential implementation of key measures for the management of COVID-19 patients were recorded.

**Results:** A total of 1023 COVID-19 patients were hospitalized during the study period with 165 deaths (16%). Case fatality rate during week one was 42% and down trended over time (Figure 1). Key measures were sequentially implemented over the course of the study period as shown in Figure 1. These included development and implementation of in-house PCR testing, dedicated infectious diseases COVID-19 rounding teams, treatment guidelines and algorithms, and early steroid use in hypoxic patients. Figure 2 demonstrates that despite the surge of COVID-19 admissions, mortality continued to improve over time.

Figure 1. Trend line of all-cause in-house mortality over time

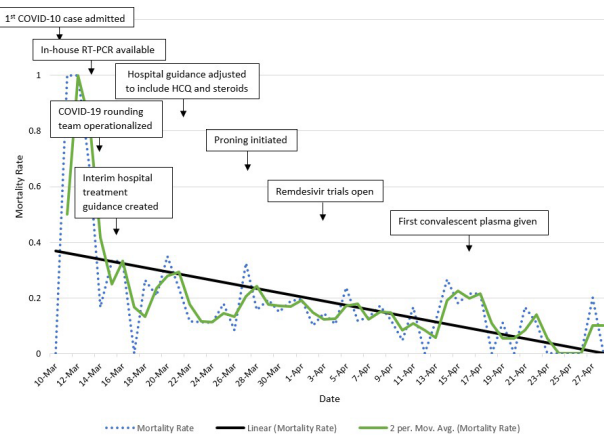
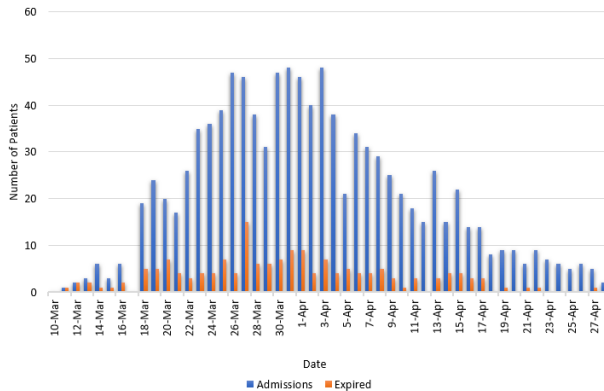


Figure 2. Mortality by admission date over time



**Conclusion:** Maturation effect takes into consideration that regardless of individual interventions, HCP improve their knowledge of the disease process and treatment over time leading to better outcomes. Our study shows the possibility of the maturation effect leading to improved survival in hospitalized COVID-19 patients. The maturation effect should be accounted for when evaluating the effect of specific interventions for COVID-19.

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**57. clinical Characteristics and Outcomes of Patients Hospitalized with COVID-19 in New Orleans, LA: A Cohort Study**

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**Background:** In Louisiana, deaths related to COVID-19 have disproportionately occurred in Black persons. Granular data are needed to better understand inequities and develop prevention strategies to mitigate further impact on Black communities.

**Methods:** We conducted a retrospective cohort study of patients admitted to an urban safety net hospital in New Orleans, LA with reactive SARS-CoV-2 testing from March 9–31, 2020. Clinical characteristics and outcomes of Black and other racial/ethnic group patients were compared using Wilcoxon rank-sum test and Fisher's exact tests. We examined Day-14 status using an ordinal scale to assess race and outcome.

Table 1. Demographics and Comorbidities by Race for Patients Hospitalized with COVID-19

Variables	All Patients n=249 Number (%) or Mean (SD)	Black Patients n=217 Number (%) or Mean (SD)	Other Racial/Ethnic Group Patients n=32 Number (%) or Mean (SD)	p-value
Age ≥ 65	89 (36)	73 (34)	16 (50)	0.078
Male Sex	110 (44)	100 (46)	10 (31)	0.130
Insurance				0.2885
None	21 (8)	16 (8)	5 (16)	
Public Insurance	196 (79)	172 (79)	24 (75)	
Private Insurance	32 (13)	29 (13)	3 (9)	
Any Comorbidity	232 (93)	202 (93)	30 (94)	1.000
BMI ≥ 40	58 (23)	51 (24)	7 (22)	1.000
Ever Smoker	95 (38)	86 (40)	9 (28)	0.246
Asthma	49 (20)	48 (22)	1 (3)	0.008
Chronic pulmonary disease	32 (13)	31 (14)	1 (3)	0.092
Hypertension	198 (80)	174 (80)	24 (75)	0.487
Myocardial infarction	27 (11)	25 (12)	2 (6)	0.546
Cardiovascular Disease	80 (32)	67 (31)	13 (41)	0.312
Dementia	21 (8)	13 (6)	8 (25)	0.002
Liver Disease	12 (5)	11 (5)	1 (3)	1.000
Diabetes Mellitus	130 (52)	118 (54)	12 (38)	0.089
Mean HbA1c (%)*	8.41 (2.56)	8.49 (2.59)	7.56 (2.15)	0.238
ESRD	24 (10)	21 (10)	3 (9)	1.000
Malignancy	30 (12)	25 (12)	5 (16)	0.559
HIV Infection	6 (2)	5 (2)	1 (3)	0.566
CCI*	2.37 (2.31)	2.38 (2.32)	2.31 (2.32)	0.939
Median Home Income (thousands of dollars)	38.83 (11.21)	38.10 (9.79)	43.78 (17.59)	0.029

Table 2. Clinical Characteristics at Presentation by Race for Patients Hospitalized with COVID-19, March 2020

	All Patients n=249 Number (%) or Mean (SD)	Black Patients n=217 Number (%) or Mean (SD)	Other Racial/Ethnic Group Patients n=32 Number (%) or Mean (SD)	p-value
Time since start of pandemic (days)	13.77 (5.66)	13.41 (5.55)	16.19 (5.91)	0.005
Symptom Duration at Presentation	6.35 (8.21)	6.41 (7.81)	5.88 (10.69)	0.050
Abnormal Chest X-ray	222 (89)	193 (89)	29 (91)	1.000
Abnormal Chest CT	15 (6)	13 (6)	2 (6)	1.000
Initial O2 Required	137 (55)	122 (56)	15 (47)	0.346
D-Dimer (ng/mL)	1816.09 (5661.56)	1956.94 (6020.53)	806.6 (1065.28)	0.626
GFR (mL/min)	65.69 (29.87)	64.96 (29.96)	70.41 (29.16)	0.334
Ferritin (ng/mL)	778.51 (1345.84)	803.42 (1420.44)	616.57 (682.33)	0.520
LDH (U/L)	375.79 (231.8)	386.03 (241.29)	298.35 (117.38)	0.030
CRP (mg/dL)	12.52 (10.81)	12.46 (8.57)	13 (21.11)	0.089
WBC (*10 <sup>3</sup> /uL)	6.98 (3.35)	7.03 (3.31)	6.62 (3.59)	0.173
ALC (*10 <sup>3</sup> /uL)	1.15 (1.5)	1.17 (1.59)	0.98 (0.57)	0.453
ANC (*10 <sup>3</sup> /uL)	5.16 (2.88)	5.18 (2.8)	5.02 (3.43)	0.265
Fever at Presentation (T <sub>z</sub> 100.4 °F)	141 (56.6)	128 (59.0)	13 (40.6)	.0575
Respiratory Rate (breaths/min)	22.77 (6.01)	22.94 (6.13)	21.66 (5.08)	0.298
Oxygen Saturation on Room Air (%)	91.49 (8.93)	91.21 (9.12)	93.31 (7.48)	0.136

**Results:** This study included 249 patients. Median age was 59, 44% were male, 86% were age ≥65 years or had ≥1 comorbidity. Overall, 87% were Black, relative to 55% Black patients typically hospitalized at our center. Black patients had longer symptom duration at presentation (6.41 versus 5.88 days, p=0.05), and were more likely to have asthma (p=0.008), but less likely to have dementia (p=0.002). There were no racial differences in initial respiratory status or laboratory values other than higher initial LDH in Black patients. Patient age and initial oxygen requirement, but not race (adjusted proportional odds ratio = 0.92, 95%CI: 0.70–1.20), were associated with worse Day-14 outcomes.

Figure 1: Admissions over time by Race

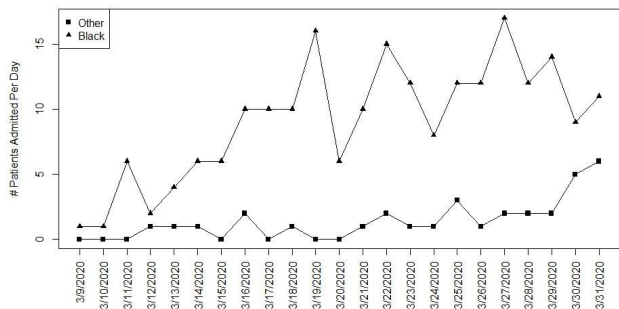


Figure 2a: Hospital outcomes by Race over the Follow-up period

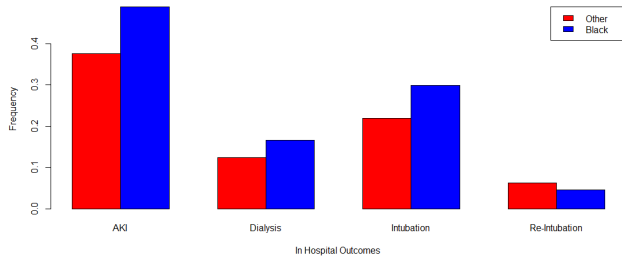
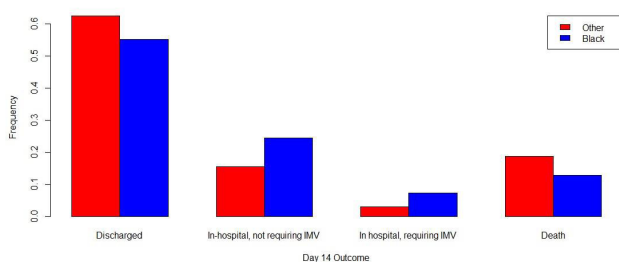


Figure 2b: Day-14 Outcomes by Race



**Conclusion:** Our results demonstrate minor racial differences in comorbidities or disease severity at presentation, and Day-14 outcomes were not different between groups. However, Black patients were disproportionately represented in hospitalizations, suggesting that prevention efforts should include strategies to limit SARS-CoV-2 exposures in Black communities as one step towards reducing racial inequities related to COVID-19.

Figure 3a: Logistic Regression for Initial Oxygen Requirement

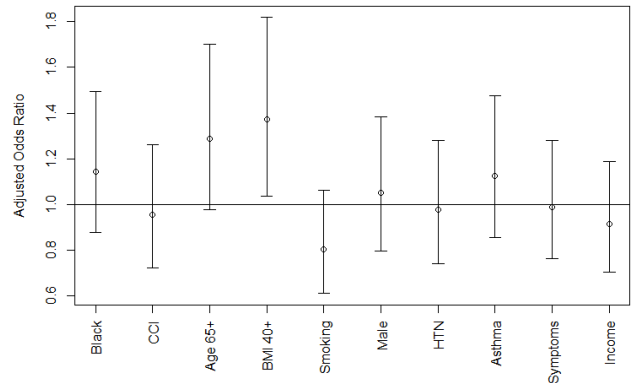
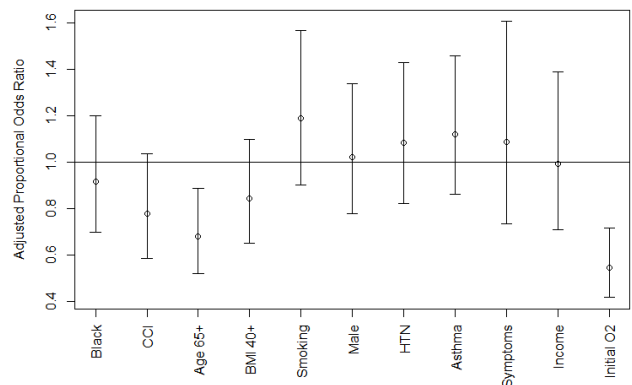


Figure 3b: Cumulative Logistic Regression for Ordinal Day-14 Outcomes



**Disclosures:** Meredith E. Clement, MD, FHI360 (Consultant) Gilead (Research Grant or Support) Janssen (Scientific Research Study Investigator)

**58. Clinical Characteristics of SARS-CoV-2 Among Confirmed and Suspected Cases in Tennessee**

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**Background:** On March 11, 2020, a pandemic due to SARS-CoV-2, the cause of coronavirus disease 2019 (COVID-19), was declared. The disease spectrum varies from asymptomatic detection to severe disease. Data on community versus hospitalized cases are limited. We aim to evaluate and compare the epidemiological and clinical characteristics associated with SARS-CoV-2 infection among suspected and confirmed COVID-19 cases primarily diagnosed in the ambulatory setting and compare their illness presentation.

**Methods:** We are prospectively enrolling a longitudinal cohort of laboratory-confirmed or suspected COVID-19 subjects and their close contacts. Suspect cases are defined as anyone who developed fever and/or Covid-19 like-symptoms in the post-Covid-19 era without proven SARS-CoV-2 detection. We consented and interviewed subjects over the phone to capture detailed sociodemographic data, medical and social histories, and clinical characteristics of the illness.

**Results:** From March 20 to June 16, 2020, 463 subjects were enrolled (Figure 1). Of those, 178 were SARS-CoV-2 positive [164 adults and 13 pediatric (< 18 years) cases] and 192 were COVID-19 suspected (111 adults and 78 pediatric cases). Adult confirmed cases were more likely to be Hispanic and have an underlying medical condition but less likely to be white compared to suspected cases (Table 1). Pediatric confirmed cases were more likely to be Hispanic and have smoke exposure, but less likely to have a travel history compared to suspected cases (Table 1). Both adult and pediatric confirmed subjects had fatigue, headache and cough as the most common symptoms reported. Cough, muscle aches and chest tightness were more likely to be reported in pediatric confirmed than suspected cases; whereas loss of taste, smell and appetite, diarrhea and fever ≥ 100.4 were documented more often in adult confirmed than suspected cases (Figure 2).