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 morality over time

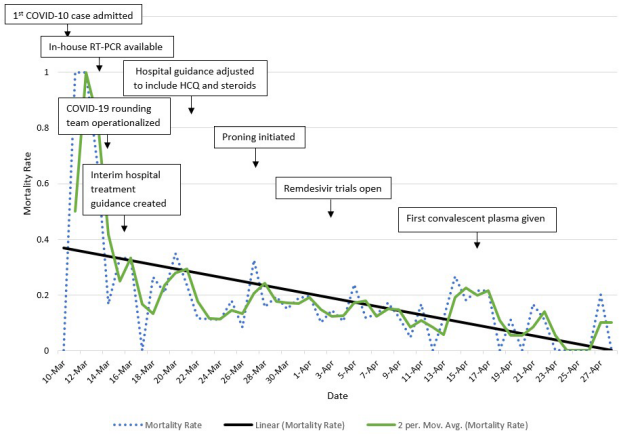
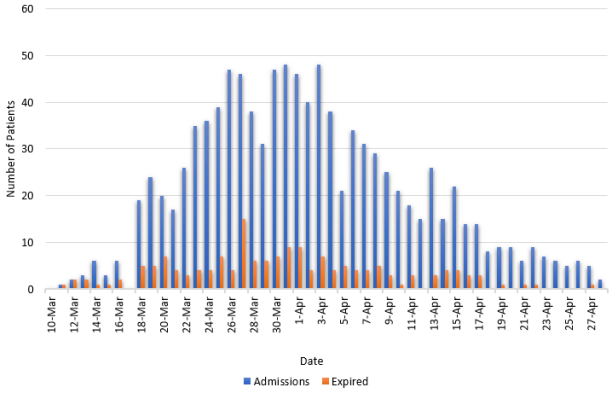


Figure 2. Mortality by admission date over time



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**