

Table 2: Prevalence and select types of antibiotics administered to CoVID-19 patients. (March 1-May 31, 2020)

Receipt of antibiotic during hospitalization, n (%)	N=829
Any below antibiotic	607 (73.2)
Ceftriaxone	415 (50)
Vancomycin/linezolid	273 (32.9)
Anti-pseudomonal beta-lactam	262 (31.6)
Macrolide	262 (31.6)
Levofloxacin	40 (4.8)

**Conclusion:** Bacterial co-infection in an acute viral process is generally low. In this examination of CoVID-19 infected patients, the rate of any positive respiratory culture was 23.6%. A disproportionate effect on the volume of antibiotics and total days of therapy prompted an interest in early stewardship efforts and education.

Table 3: Antibiotic consumption (patient days of therapy) for CoVID-19 encounters (March 1-May 31, 2020) compared to total consumption during identical time periods in 2018, 2019, and 2020

		2020	2019	2018
Total hospital days*	--	54394	63507	62641
	Covid-19 DOT/1000	Average DOT/1000 patient days		
Total Antibiotic	831.9	368.3	281.7	274.7
Vancomycin	190.8	74.9	50.9	57.5
Ceftriaxone	184.1	102.7	72.8	67.5
Cefepime	170.2	79.0	62.7	58.0
Azithromycin	97.5	18.4	13.8	15.0
Ceftazidime	67.5	21.5	14.2	15.9
Meropenem	64.4	28.7	22.4	17.7
Levofloxacin	23.1	7.9	9.6	8.4
Piperacillin-tazobactam	22.9	30.3	32.2	31.5
Linezolid	11.4	4.8	3.1	3.1

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**55. Diabetes, Obesity and COVID-19 Disease: An Observational Study of Outcomes Among Hospitalized Patients in Boston, Massachusetts**

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**Background:** In the United States, diabetes mellitus (DM) is among the most common chronic diseases, with approximately 34.2 million people affected. DM has also emerged as a commonly reported risk factor among people hospitalized with coronavirus disease 2019 (COVID-19). In this study, we sought to evaluate whether people with DM who are hospitalized with COVID-19 were more likely to experience poor early outcomes and whether this association remained after adjustment for obesity status.

**Methods:** We analyzed data from the Massachusetts General Hospital (MGH) COVID-19 Data Registry. The sample included 450 people with PCR-confirmed SARS-CoV-2 infection who were hospitalized at MGH between March 11, 2020 and April 30, 2020. The primary outcomes were (1) admission to the intensive care unit (ICU) and (2) need for mechanical ventilation or death, both within 14 days of presentation to care. Data were obtained by manual chart review and via an EMR-associated database. Logistic regression was used to evaluate the relationship between diabetes and these outcomes. All models were adjusted for age, sex, race, BMI category and key comorbidities.

**Results:** In this study, 178 (39.6%) of 450 participants had DM and 346 (76.9%) were overweight or obese. People with DM were on average older and had a higher BMI than those without DM. A higher percentage of patients with DM were admitted to the ICU (42.1% vs 29.8%, p=0.007) and required mechanical ventilation or died (46.6% vs 27.7%, p<0.001), compared with patients without DM (Figure 1). In adjusted models, DM was associated with a greater odds of ICU admission (aOR: 1.58 [95% CI: 1.01-2.46]) and mechanical ventilation or death (2.15 [1.38-3.34]). Obesity was associated

with a greater odds of ICU admission (2.15 [1.20-3.86]) but not with mechanical ventilation or death (1.52 [0.87-2.67]). Table 1 provides the model results in full.

Figure 1. ICU Admission and mechanical ventilation or death within 14-days by diabetes status among 450 people hospitalized with COVID-19

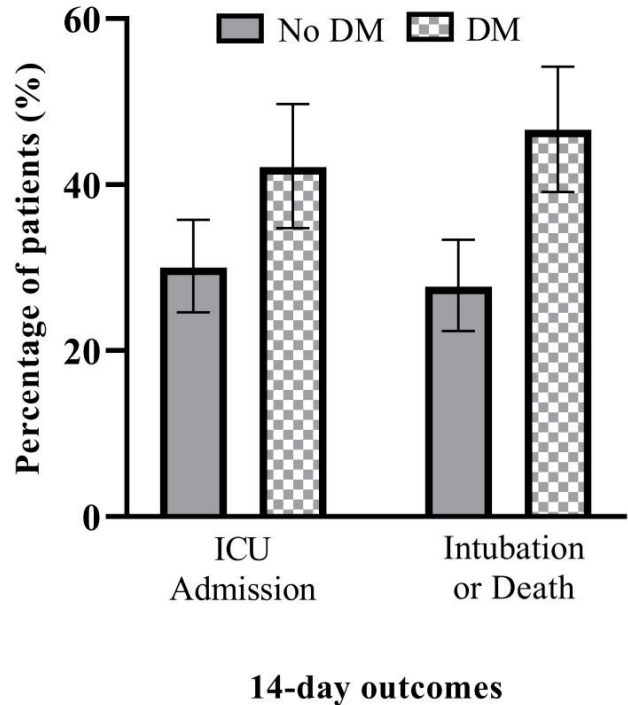


Table 1. Multivariable logistic regression analysis of 14-day outcomes among 450 hospitalized people with COVID-19.

Characteristic	ICU Admission	Mechanical Ventilation or Death
	N=436 OR (95% CI)	N=436 OR (95% CI)
Diabetes	1.58 (1.01-2.46)	2.15 (1.38-3.34)
BMI Category		
Overweight	1.42 (0.78-2.58)	0.96 (0.54-1.70)
Obese	2.15 (1.20-3.86)	1.52 (0.87-2.67)
Age		
50-59	1.12 (0.57-2.19)	0.95 (0.48-1.90)
60-69	1.20 (0.60-2.40)	1.01 (0.50-2.04)
≥70	1.38 (0.71-2.66)	2.00 (1.03-3.89)
Male	1.37 (0.88-2.12)	1.61 (1.04-2.50)
Race/ethnicity		
Hispanic	1.56 (0.93-2.76)	1.40 (0.81-2.42)
African American	1.35 (0.62-2.94)	0.98 (0.44-2.17)
Other	2.29 (0.76-6.92)	1.07 (0.33-3.46)
Unknown/missing	2.74 (1.38-5.46)	1.53 (0.77-3.06)
CAD or MI	0.62 (0.33-1.17)	0.61 (0.33-1.12)
CHF	1.65 (0.77-3.50)	1.40 (0.67-2.92)
COPD/Asthma	0.70 (0.39-1.11)	0.58 (0.35-0.97)
Cancer (active)	0.60 (0.18-1.93)	0.84 (0.30-2.36)
Liver disease	1.13 (0.57-2.23)	0.91 (0.45-1.82)
Renal disease	0.89 (0.49-1.62)	1.09 (0.61-1.93)

Reference groups: "No disease" for diabetes and all comorbidities, normal weight for BMI category, age <50, female sex, Non-Hispanic White for race/ethnicity. Events per outcome: 156 people were admitted to the ICU, 129 people were mechanically ventilated, 49 people died within 14 days of presentation to care. BMI categorization (kg m<sup>-2</sup>): <18.5 kg m<sup>-2</sup> for underweight, >18.5-24.9 kg m<sup>-2</sup> for normal weight, >25.0-29.9 kg m<sup>-2</sup> for overweight and >30.0 kg m<sup>-2</sup> for obese.

**Conclusion:** Diabetes was associated with poor outcomes within 14-days of presentation to care for COVID-19. These findings remained after adjustment for obesity. Our findings can help guide risk mitigation efforts and patient-centered care decision making for people with DM and obesity, particularly in areas of the US that have a high prevalence of DM and obesity and are in early phases of the SARS-CoV-2 outbreak.

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