Table 1. Characteristics of nursing home individuals with repeat positive SARS-CoV-2 specimens 90 days or more following initial infection: July 2020 – March 2021.

Characteristic	Total	High RNA Viral Load (Ct < 30)	Low RNA Viral Load (Ct ≥ 30 or negative at re-testing) [c]	P-value*
	N (%)	n (%)	n (%)	-
	64	10	54	-
Median Age, years [Interquartile Range (IQR)]	67 [51-80]	62 [47-79]	68 [53-80]	0.56
Median days from initial infection to repeat positive test [IQR]	194 [124-251]	122 [103-229]	201 [139-254]	0.13
Nursing Home Role	-	-	-	
Resident	40 (63%)	4 (40%)	36 (67%)	0.16
HCP	24 (38%)	6 (60%)	18 (33%)	
Testing between Initial and Repeat Positive Test	-	-	-	-
At least two negative SARS-CoV-2 RT-PCR or antigen test result	30 (47%)	6 (60%)	24 (44%)	0.49
Had a negative SARS-CoV-2 RT-PCR or antigen test result 14 days prior to repeat positive test	32 (50%)	7 (70%)	25 (46%)	0.30
Median days from most recent SARS-CoV-2 RT-PCR or antigen test to repeat positive test result [IQR]	7 [6-14]	4 [4-7]	8 [6-14]	0.05
Symptom status at time of repeat positive test [a]	-	-	-	-
Asymptomatic	31 (84%)	5 (50%)	26 (96%)	<0.01
Symptomatic	6 (16%)	5 (50%)	1 (4%)	
Known or suspected COVID-19 exposure in nursing home outbreak at repeat positive episode [b,c]	-	-	-	
Yes	46 (79%)	9 (100%)	37 (76%)	0.18
No	12 (21%)	0 (0%)	12 (25%)	
Symptomatic or confirmed or suspected COVID-19 exposure* [d]	-	-	-	
Yes	48 (91%)	10 (100%)	38 (88%)	0.57
No	5 (9%)	0 (0%)	5 (12%)	

Ct = Cycle threshold value; HCP = healthcare personnel; rRT-PCR = real-time reverse transcriptase polymerase chain reaction
[c] 37 specimens had undetectable viral load when re-tested
*High viral load and low viral load were compared for statistical significance by Wilcoxon Signed-rank Test or Chi-squared test where indicated
[a] Symptom status at time of repeat positive test is unknown for 27 cases (0 with Ct < 30, 27 with Ct ≥ 30)
[b] Known COVID-19 exposure is unknown for 58 cases (5 with Ct<30 and 53 with Ct ≥ 30)
[c] Suspected COVID-19 exposure during a nursing home outbreak at time of repeat positive test is unknown for 6 individuals (1 with Ct<30 and 5 with Ct ≥ 30)
[d] Unknown exposure status for 12 individuals (12 with Ct ≥ 30)

Conclusion. In this study, nearly 1 in 6 NH residents and staff with repeat positive tests after 90 days demonstrated high viral RNA loads and viable virus, indicating possible infectivity. While individuals with high RNA viral load may be more likely to be symptomatic, distinguishing asymptomatic individuals who have high viral loads may be difficult with timing since initial infection, other test results, or exposure history alone.

Disclosures. **John A. Jernigan, MD, MS**, Nothing to disclose.

394. Descriptive Evaluation of Epidemiology and Microbiology of Patients with COVID-19 Pre/post Implementation of Corticosteroids as Standard of Care

Goran Flajc, PharmD[1]; Ahmed Zaki, PharmD[1]; [1]Baylor St. Luke's Medical Center, Houston, Texas

Session: P-16. COVID-19 Epidemiology and Screening

Background. The coronavirus disease 2019 (COVID-19) pandemic continues to present a significant global public health concern. As of June 2021, nearly 174 million cases of SARS-CoV-2 infection worldwide have been reported to the World Health Organization. Rigorous data on the efficacy of corticosteroids have now established its role as standard of care (SOC). Less recognition has been given to corticosteroid therapy and its association with risk of infection especially in those who are critically ill and prone to nosocomial pathogens.

Methods. This is a retrospective study of mechanically ventilated patients with COVID - 19 from March 2020 to September 2020 at a single center. The primary endpoint for this study was description of microbiology and epidemiology of secondary infections and co -infections, defined as any infection following treatment for COVID - 19. Secondary endpoints included the duration of corticosteroid use, length of hospital stay, ICU length of stay, and mortality.

Results. Of the 104 patients, 73% had co-infections or secondary infections. Pre-SOC patients were more likely to receive >10 days of corticosteroids (71% vs 30%). Co-infections were present in 12% of patients (13% in pre-SOC vs 11% in post-SOC), secondary infections occurred in 61% of patients (74% in pre-SOC vs 53% in post-SOC). The most common causative organism of co-infections and secondary infections were Staphylococcus aureus in the pre-SOC group and Escherichia coli and Pseudomonas aeruginosa in the post-SOC group. The mean hospital length of stay was 43 days pre-SOC vs 33 days post-SOC with a mean ICU length of stay of 33 vs 29 days, respectively. Mortality rate was similar between the two groups (55% vs 58%).

Conclusion. Differences in epidemiology and microbiology was seen pre and post implementation of dexamethasone in June, 2020. Higher rates of co-infections were seen with this prolonged use of corticosteroids pre-SOC but it is unclear whether patients developed more co-infections as result of extended corticosteroid use, a longer hospital stay, or other factors. Further studies are needed to assess the optimal duration of corticosteroid use in this patient population with consideration to weigh benefit vs risk.

Disclosures. **All Authors**: No reported disclosures

395. Early Predictors of Intensive Care Unit Admission among COVID-19 Patients in Qatar

Safae Abuyousef, PharmD[1]; Shaikha Alnaimi, PharmD[2]; Nabil E. Omar, PharmD, BCOP[3]; Reem Elajez, PharmD[4]; Eman Zeyad Ibrahim Elmekaty, PharmD[4]; Eiman Abdelfattah-Arafa, Rph, BCPS, MSc clinical pharmacy[4]; Raja Barazi, BScPharm, PharmD, BCPS[4]; Rola Ghasoub, bsc[5]; Ala Rahhal, MSc[4]; Fatima Hamou, PharmD[6]; Maha K. Al-Amri, PharmD[4]; Ahmed Karawia, Bsc Pharmacy[4]; Fatima Ajaj, BSc Pharmacy[7]; Raja Alkhawaja, PharmD[8]; Ahmed Kardousha, BSc[9]; Ahmed Awaisu, Ph.D.[10]; Adel Abou-Ali, PharmD, PhD[11]; Mohamad Khatib, MD., FCCP[12]; Mohamed AbouKamar, CABM[6]; Moza Al-Hail, n/a[13]; [1]Department of Pharmacy, Heart Hospital, Hamad Medical Corporation, Doha, Qatar, Doha, Ad Dawhah, Qatar; [2]Department of Pharmacy, Hamad Bin Khalifa Medical City, Hamad Medical Corporation, Doha, Ad Dawhah, Qatar; [3]Pharmacy Department, National center for cancer care and research, Hamad Medical Corporation, Qatar, Doha, Ad Dawhah, Qatar; [4]Hamad Medical Corporation, Doha, Ad Dawhah, Qatar; [5]ncccr, doha, Al Khawr, Qatar; [6]Hamad medical corporation, Doha, Ad Dawhah, Qatar; [7]Home Health Care, Hamad Medical Corporation, Doha, Qatar, doha, Ad Dawhah, Qatar; [8]Department of Pharmacy, Hamad General Hospital, Hamad Medical Corporation, Doha, Qatar, Doha, Ad Dawhah, Qatar; [9]Hamad Medical corporation, Doha, Ad Dawhah, Qatar; [10]College of Pharmacy, Qatar University, Doha, Ad Dawhah, Qatar; [11]Astellas Pharma Global Development, Inc., Northbrook, Illinois; [12]Hamad General Hospital, Hamad Medical Corporation, Doha, Qatar, Doha, Ad Dawhah, Qatar; [13]Hamad Medical Corpoartion, Doha, Ad Dawhah, Qatar

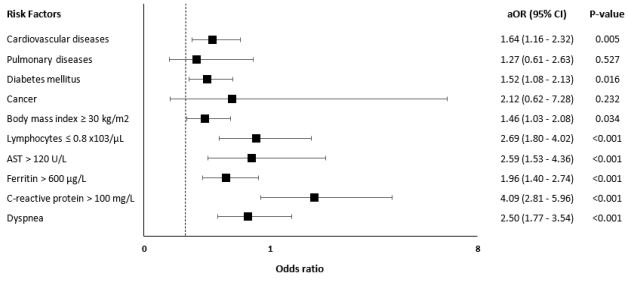
Session: P-16. COVID-19 Epidemiology and Screening

Background. Coronavirus disease (COVID-19) is associated with significant morbidity and mortality. This study aimed to explore the early predictors of intensive care unit (ICU) admission and in-hospital mortality among patients diagnosed with COVID-19.

Methods. This was a case-control study of adult patients with confirmed COVID-19. Cases were defined as patients admitted to ICU during the period February 29 - May 29, 2020. For each case enrolled, one control was matched by age and gender.

Results. A total of 1560 patients with confirmed COVID-19 were included. Each group included 780 patients with a predominant male gender (89.7%) and a median age of 49 years (interquartile range = 18). Predictors independently associated with ICU admission were cardiovascular disease (CVD) (adjusted odds ratio (aOR)=1.64, 95% confidence interval (CI): 1.16 - 2.32, p=0.005), diabetes (aOR=1.52, 95% CI: 1.08 - 2.13, p= 0.016), obesity (aOR=1.46, 95% CI: 1.03-2.08, p= 0.034), lymphopenia (aOR=2.69, 95% CI: 1.80-4.02, p< 0.001), high aspartate aminotransferase (AST) (aOR= 2.59, 95% CI: 1.53-4.36, p< 0.001), high ferritin (aOR=1.96, 95% CI: 1.40-2.74, p< 0.001), high C-reactive protein (CRP) (aOR=4.09, 95% CI: 2.81-5.96, p< 0.001), and dyspnea (aOR=2.50, 95% CI: 1.77-3.54, p< 0.001). Similarly, significant predictors of mortality included CVD (aOR=2.16, 95% CI: 1.32- 3.53, p=0.002), diabetes (aOR=1.77, 95% CI: 1.07-2.90, p=0.025), cancer (aOR=4.65, 95% CI: 1.50-14.42, p= 0.008), lymphopenia (aOR=2.34, 95% CI: 1.45-3.78, p= 0.001), and high AST (aOR= 1.89, 95% CI: 1.04-3.43, p=0.036).

Risk Factors for ICU admission among patients with COVID-19 (N=1560)



Conclusion. Having CVD, diabetes, lymphopenia, and increased AST were independent predictors for both ICU admission and in-hospital mortality in patients with COVID-19. In addition, obesity, high ferritin, and CRP levels were associated with increased risk of ICU admission, while cancer was strongly associated with in-hospital mortality. Early identification and monitoring of patients at risk is essential in planning the level of care needed to prevent delay in medical intervention.

Disclosures. **Adel Abou-Ali, PharmD, PhD**, **Astellas Pharma Global Development, Inc.** (Employee)

396. Disparities in SARS-CoV-2 Antibody Prevalence: Findings from a Citywide Serosurvey in Holyoke, Massachusetts, November 2020–January 2021

Wilfredo Matias, MD MPH[1]; Isabel Fulcher, PhD[2]; Cody Nolan, MD[3]; Yodeline Guillaume, MA[4]; Jack Zhu, MPH[4]; Francisco Molano, MD[4]; Elizabeth Uceta, BA[4]; Shannon Collins, BA[4]; Damien Slater, PhD[4]; Vanessa Sanchez, BS[4]; Serina Moheed, BS[5]; Jason Harris, MD MPH[4]; Richelle Charles, MD[4]; Ryan Paxton, MPH[6]; Sean Gonsalves, BS[6]; Molly Franke, ScD[7]; Louise Ivers, MD, MPH[4]; [1]Mass GeneralBrigham, Boston, Massachusetts; [2]Harvard Data Science Initiative, Boston, Massachusetts; [3]Brigham and Women's Hospital, Boston, Massachusetts; [4]Massachusetts General Hospital, Boston, Massachusetts; [5]smoheed@mgh.harvard.edu, Boston, Massachusetts; [6]Holyoke Board of Health, Holyoke, Massachusetts; [7]Harvard Medical School, Boston, Massachusetts

Session: P-16. COVID-19 Epidemiology and Screening

Background. Seroprevalence studies are important tools to estimate the prevalence of prior or recent SARS-CoV-2 infections. This information is critical for identifying hotspots and high-risk groups and informing public health responses to the COVID-19 pandemic. We conducted a city-level seroprevalence study in Holyoke, Massachusetts to estimate the seroprevalence of SARS-CoV-2 antibodies and risk factors for seropositivity.

Methods. We invited inhabitants of 2,000 randomly sampled addresses to participate between November 5 and December 31, 2020. Participants completed questionnaires measuring sociodemographic and health characteristics, and COVID-19 exposure history, and provided dried blood spots for measurement of SARS-CoV-2 IgG and IgM antibodies. To calculate total and group seroprevalence estimates, inverse probability of response weights were constructed based on age, gender, race/ethnicity and census tract to ensure estimates represented the city's population.

Results. We enrolled 280 households including 472 individuals. 328 underwent antibody testing. The citywide weighted seroprevalence of SARS-CoV-2 IgG or IgM was 13.9% (95%CI 7.8 - 21.8) compared to 9.8% based on publicly reported case counts. Seroprevalence was 16.8% (95%CI 5.7 – 28.0) among individuals identifying as Hispanic compared to 8.9% (95%CI 3.0 - 14.7) among those identifying as White. Seroprevalence was 20.7% (95%CI 2.2 – 39.2) for ages 0-19; 13.8% (95%CI 5.6 – 22) for ages 20 – 44; 9.6% (95%CI 0 – 20.5) for ages 45 – 59; 4.8% (95%CI 0 – 10.2) for ages 60 – 84; and 42.9% (95%CI 0 – 100) for ages >85.

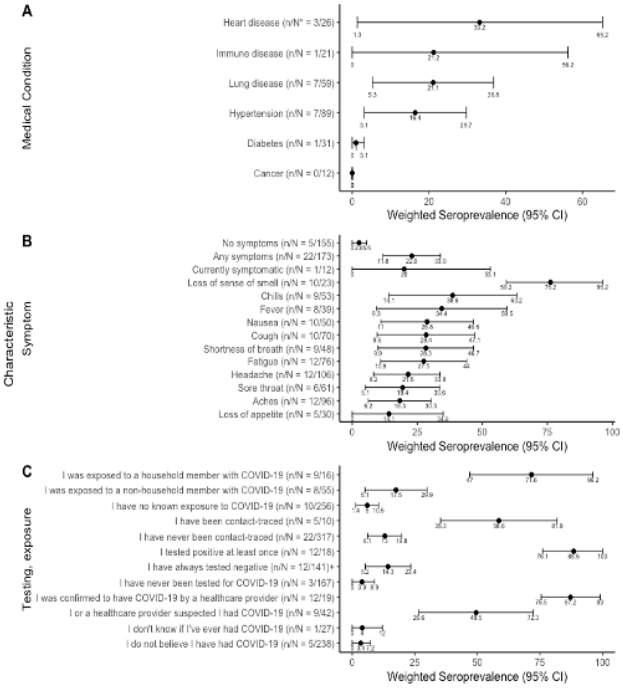
Table 1. Seroprevalence by antibody positivity profile

Characteristic	No. tested	No. Positive	Unweighted seroprevalence, % (95% CI)	Weighted seroprevalence, % (95% CI)
IgG or IgM	328	27	8.2 (5.0 - 12.5)	13.9 (7.8 - 21.8)
IgG only	328	18	5.5 (3.1 - 8.7)	8.0 (3.8 - 14.4)
IgG and IgM	328	7	2.1 (0.9 - 4.1)	3.8 (1.5 - 7.5)
IgM only	328	2	0.6 (0.1 - 1.9)	2.0 (0.4 - 6.0)

Table 2. Unweighted and weighted seroprevalence by sociodemographic characteristics

Characteristic (N if not 328)	N	n	Unweighted Seroprevalence, % (95% CI)	Weighted[4] Seroprevalence, % (95% CI)
Age groups (years)				
0-19	27	3	11.1 (0-26.7)	20.7 (2.2-39.2)
20-44	76	11	14.5 (5.6-23.3)	13.8 (5.6-22)
45-59	94	6	6.4 (0.7-12.1)	9.6 (0-20.5)
60 and above	131	7	5.3 (1.6-9.1)	9.1 (0-18.5)
Gender				
Female	180	16	8.9 (4.6-13.2)	12.7 (5.5-14.5)
Male	139	11	7.9 (3-12.8)	15.3 (4.7-25.9)
Transgender, non-binary, prefer not to answer	9	0	-	-
Race/Ethnicity				
White, non-Hispanic	239	17	7.1 (3.2-11.1)	8.9 (3-14.7)
Hispanic or Latino/Latina	66	9	13.6 (2.1-25.2)	16.8 (5.7-28)
Black or African American, non-Hispanic	5	1	20 (0-55.1)	38.7 (0-98.3)
Asian, non-Hispanic	5	0	-	-
American Indian or Alaskan Native, non-Hispanic	1	0	-	-
Two or more races, non-Hispanic	2	0	-	-
Other race, non-Hispanic	5	0	-	-
Prefer not to answer	5	0	-	-
Primary language spoken in the household (N = 327)				
English	275	19	6.9 (3.3-10.5)	9 (3.5-14.5)
Spanish	36	8	22.2 (3.6-40.8)	32.4 (11.6-53.1)
Multi-lingual	13	0	-	-
Other	3	0	-	-
Highest education level (N = 298)*				
Some high school or less	22	2	9.1 (0-25.7)	8.7 (0-24.9)
High school/GED or some college	95	8	8.4 (1.1-15.7)	8.9 (1.2-16.5)
Associate or bachelor's degree	101	8	7.9 (2.1-13.8)	12.8 (2.4-23.3)
Master's doctorate or professional degree	80	6	7.5 (1.8-13.2)	17.5 (2.6-32.5)
Employment status on February 1st, 2020 (N = 304)*				
Working	181	20	11 (5.7-16.4)	14.9 (7-22.8)
Not Working	94	2	2.1 (0-6.2)	3.9 (0-11.4)
Other	29	2	6.9 (0-16.2)	8.7 (0-22.3)
Worked outside home during "stay at home" order (N=304)*				
No	211	13	6.2 (2.5-9.8)	11.7 (4.5-18.8)
Yes	93	11	11.8 (4.3-19.4)	10.1 (1.1-19.1)

Figure 1. Seroprevalence by Medical, Symptom, Testing and Exposure History.



Conclusion. The measured SARS-CoV-2 seroprevalence in Holyoke was only 13.9% during the second surge of SARS-CoV-2 in this region, far from accepted thresholds for "herd immunity" and highlighting the need for expanding vaccination. Individuals identifying as Hispanic were at high risk of prior infection. Subsequent community-level serosurveys are necessary to guide local responses to the SARS-CoV-2 pandemic.

Disclosures. **All Authors**: No reported disclosures

397. Impact of School Opening Model on Cases of SARS-CoV-2 in Surrounding Communities: A Nationwide, Retrospective Cohort Study

Westyn Branch-Elliman, MD, MMSc[1]; Zeynep Ertem, PhD[2]; Elissa Perkins, MD, MPH[3]; Polly van den Berg, MD[4]; Isabella Epshtein, MPP[5]; Nathorn Chaiyakunapruk, PhD[6]; Fernando Wilson, PhD[6]; Emily Oster, PhD[7]; Richard Nelson, PhD8; [1]Veterans Affairs Boston Center for Healthcare Organization and Implementation Research, Boston, Massachusetts; [2]SUNY Binghamton, Binghamton, New York; [3]Boston University, Boston, Massachusetts; [4]BIDMC, Boston, Massachusetts; [5]VA Boston CHOIR, Boston, Massachusetts; [6]University of Utah, Salt Lake City, Utah; [7]Brown University, Providence, Puerto Rico; [81] IDEAS Center, VA Salt Lake City Healthcare System, [2] Division of Epidemiology, University of Utah School of Medicine, Salt Lake City, UT

Session: P-16. COVID-19 Epidemiology and Screening

Background. Early in the COVID-19 pandemic, elementary and secondary schools were closed. There was variation in school opening mode (traditional, hybrid, remote) in fall 2020.The aim of this national, retrospective cohort study is to evaluate the impact of in-person learning on community incidence of SARS-CoV-2 and COVID-19-related deaths.

Methods. Data were extracted from several data sources. School opening mode was collected from the Burbio school tracker, which tracks school openings in a sample of school districts across the US. Incidence of SARS-CoV-2 and COVID-19 related deaths were obtained from the CDC. Data on community-level SARS-CoV-2 mitigation measures were obtained from the Oxford University COVID-19 Government Response Tracker. The effect of school mode on SARS-CoV-2 cases and deaths/100,000 during the 12-weeks following the start of school was estimated using a log-linear model with state, week, and state-week fixed effects. Models were stratified by 9 US Census divisions and adjusted for variables determined a priori to be potentially associated with the outcome.

Results. 519 US counties were included (Figure 1); mean cases of COVID-19 were increasing across all regions during the weeks following the start of school, regardless