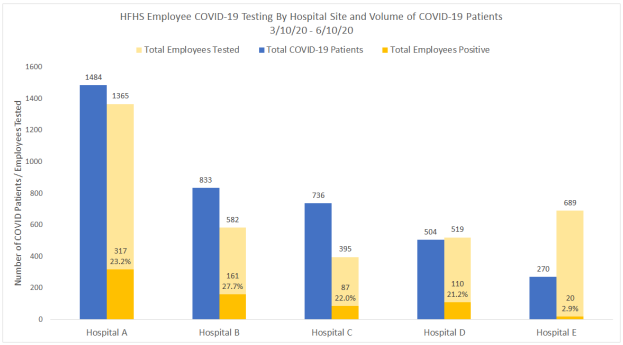
Table 2

COVID Testing of Non Physician/Nurse Patient-Centered Employees 3/10/20 - 6/10/20			
Job Function	Empoloyees Tested	Employees Positive	%Positive
Environmental Services	171	35	20.5%
Dietary	56	16	28.6%
Security	48	12	25.0%
Transportation	48	10	20.8%
Rehabilitation/Therapy	142	34	23.9%
Pharmacy	124	20	16.1%
Advanced Practitioners	50	8	16.0%
Dialysis	47	11	23.4%
Total Symptomatic Empoloyees	686	146	21.3%

Figure 2



Conclusion: COVID-19 risk is highest among HCW in high volume settings with close patient contact. Community exposure may be an important factor that contributes to this risk. Strategies to minimize transmission in healthcare settings should be combined with HCW education emphasizing measures to avoid exposure within the community.

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

445. Correlative Factors for State to State Differences in the Prevalence and Case Fatality Rates of SARS-CoV-2, COVID-19 Infections in the United States of America

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Session: P-14. COVID-19 Epidemiology and Screening

Background: Individual States of the USA have ethnic, economic, community health and education differences that influence the prevalence and outcomes of COVID-19 infection. We hypothesized that Statewide differences in the prevalence and fatality rates of COVID-19 infections are dependent on factors that may be determined by mathematical modeling.

Methods: Two separate statistical regression models were developed using COVID-19 case prevalence and case fatality rates functioning as dependent variables. We obtained data from the prevalence and deaths from COVID-19 cases for each state in the USA that was posted at 4 PM Central Standard Time on April 29, 2020 from the Worldometer website. Publicly available databases were utilized to obtain data for the independent variables in the model.

Results: Models are represented as follows:

Statewide COVID-19 Prevalence Model

Log (Statewide COVID_19 case prevalence) = 1.847* (100–250 individuals/mile2) +3.0025*(250+ individuals/mile2) + 1.021* (% African American population) +1.029* (% Hispanic American population +2.164 *(% adults aged 85+)

Model results are shown in Table 1.

Statewide COVID-19 Case Fatality Rate Model

Log (Statewide COVID_19 case fatality rate) =2.194* (100–250 individuals/mile2) +2.758* (250+ individuals/mile2) +1.031* (% African American population) + 1.032* (% Hispanic American population) + 0.942 (% Native American population)+ 1.108 (% Asian American population) + 2.275 (% adults aged 85+)

Model results are shown in Table 2.

Table 1: COVID-19 Statewide Prevalence Model

Table 1: Final predictive model for Statewide Demographic and Geographic Variables Adjusted Effects on the Prevalence of COVID-19 Infections (COVID-19 Statewide Prevalence Model)

Label	Beta Estimate	Standard Error	Alpha	Beta Confidence Limits		Chi-Square	Pr > ChiSq
100-250 indi./2 mile	1.8466	0.3396	0.05	1.2877	2.6481	11.12	** 0.0009
250+ indi./mile2	3.0025	0.7502	0.05	1.8400	4.8995	19.37	<.0001***
<100 indi./mile2	0.0000	0.0000	0.05	0.0000	0.0000	.	.
% African American	1.0215	0.0089	0.05	1.0043	1.0391	6.01	0.0142**
% Hispanic	1.0288	0.0094	0.05	1.0105	1.0474	9.58	0.0020**
% adults aged 85+	2.1638	0.6242	0.05	1.2293	3.8087	7.16	0.0075**

†Effect represented as (exponentiated standardized regression coefficient)
*p<0.05, **p<0.01, *** p<0.0001

Table 2: COVID-19 Statewide Case Fatality Model

Table 2: Final predictive model for Statewide Demographic and Geographic Variables Adjusted Effects on the COVID-19 Case Fatality Rate (COVID-19 Statewide Case Fatality Model)

Label	Beta Estimate	Standard Error	Alpha	Beta Confidence Limits		Chi-Square	Pr>ChiSq
100-250 indi./mile²	2.1939	0.5267	0.05	1.3705	3.5120	10.71	0.0011**
250+ indi./mile²	2.7581	1.0661	0.05	1.2931	5.8832	6.89	0.0087**
<100 indi./mile²	0.0000	0.0000	0.05	0.0000	0.0000	.	.
% African American	1.0310	0.0119	0.05	1.0080	1.0545	7.06	0.0079**
% Hispanic	1.0317	0.0109	0.05	1.0106	1.0532	8.80	0.0030**
% Native American	0.9423	0.0319	0.05	0.8819	1.0068	3.10	0.0785
% Asian	1.1077	0.0518	0.05	1.0106	1.2141	4.77	0.0289*
% adults aged 85+	2.2753	0.9476	0.05	1.0058	5.1469	3.90	0.0484*

†Effect represented as (exponentiated standardized regression coefficient)
*p<0.05, **p<0.01,***p<0.0001

Conclusion: Higher State population density (See Figure 1 and Figure 2) and higher State populations of elderly persons correspond to increased prevalence and case-fatality rates of COVID-19 infections. Statewide data also shows health disparities for COVID-19 infections in Hispanic Americans, African Americans, and Asian Americans. Paradoxically, States with larger populations of Native Americans who have known poor outcomes from COVID-19 infection demonstrate a decrease in case-fatality rates, suggesting a large effect of healthcare inequality in this population.

Figure 1: ANOVA one-way analysis of the association between COVID-19 prevalence and population density

Figure 1: ANOVA one-way analysis of the association between COVID-19 prevalence and population density. The graph displays positive association between means of COVID-19 case prevalence and population density

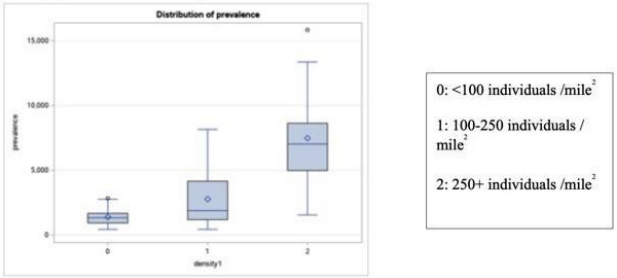
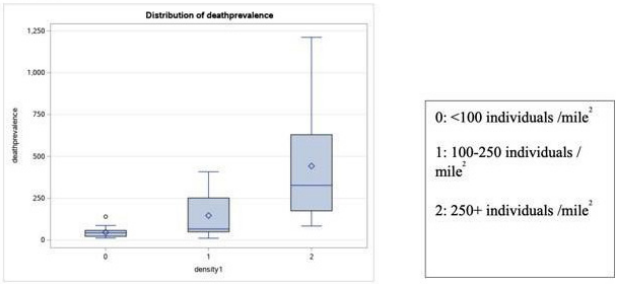


Figure 2: ANOVA one-way analysis of the association between COVID-19 death prevalence and population density

Figure 2: ANOVA one-way analysis of the association between COVID_19 death prevalence and population density. The graph displays positive association between means of COVID-19 death prevalence and population density



Disclosures: **Eli D. Ehrenpreis, MD, FACG, AGAF**, **E2Bio Consultants** (Board Member, Chief Executive Officer)**E2Bio Life Sciences** (Shareholder, Chief Executive Officer)**Level Ex, Inc.** (Consultant)

446. COVID 19 Pandemicity: a global situation report as of June 9, 2020

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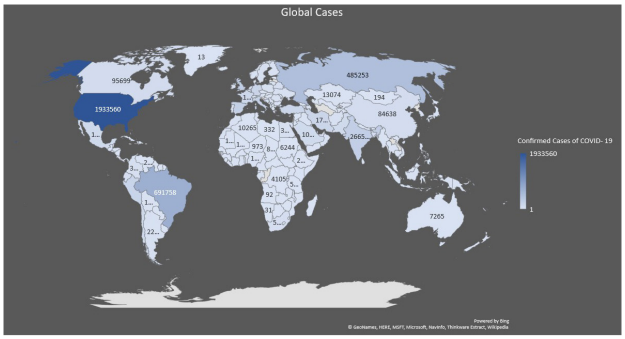
Session: P-14. COVID-19 Epidemiology and Screening

Background: The World Health Organization (WHO) declared severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) a pandemic on March 11, 2020. This report takes a closer look at the cases, fatalities, and recoveries in different regions of the world with details regarding the geographic scale of SARS-CoV-2 spread, risks, and the subsequent impact on the countries affected. Also, this report discusses some effective measures that were carried out by some countries that helped them to mitigate the pandemic and flatten the curve of COVID-19 spread as early as possible.

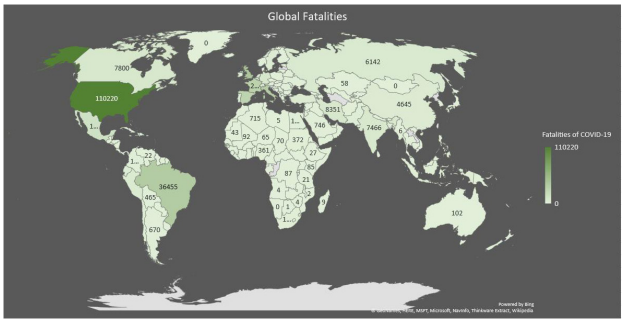
Methods: Our research was conducted via an electronic literature review on PubMed, Google Scholar, and MedLine Plus. Data were then collected from peer-reviewed articles that included applicable keywords and published between January 1, 2020, and June 9, 2020

Results: The rapid spread of infection has impacted over 200 countries and territories to date. As of June 9, 2020, there were 7,039,918 confirmed cases and 404,396 deaths globally. The USA is the North American country with the highest number of confirmed COVID 19 cases with 1,993,560. In South America, total confirmed cases in Brazil are 691,758. The most affected country in the African region is South Africa with 50,879. In Europe, the Russian Federation top with 485,253 confirmed cases. China with 84,638 is still the Western Pacific country with the most confirmed COVID 19 cases. India had 266,598 total confirmed cases and Australia reported 7,265 confirmed cases. Fatalities recorded similar patterns regionally except in Europe where the UK recorded the highest number of fatalities with 40,597 deaths and Iran had the highest number of fatalities with 5,957 cases in Asia. The goal of the practice "slowing the spread" is to prevent hospital systems from being strained beyond their capacity, thus resulting in less mortality. Countries yet to see the peak would benefit substantially by implementing aggressive social distancing, self-isolation, closure of schools and other institutions, encouraging working from home, and/or placing hard limits on the size of crowds at events.

Confirmed cases of COVID-19 globally, as of June 9, 2020.



Confirmed fatalities due to COVID-19 globally, as of June 9, 2020.



Conclusion: As the number of cases increases, an immediate need to "flatten the curve" is essential to avoid catastrophic overwhelming of hospital systems across the affected countries.

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

447. COVID-19 Prevalence Among COVID-19 Exposed Health Care Workers at a Tertiary Care Center in San Bernardino County, Ca

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Session: P-14. COVID-19 Epidemiology and Screening

Background: We studied the prevalence of positive SARS-CoV2 antibody and positive SARS-CoV2 antigen among high risk health care workers at Loma Linda University Health System (LLUHS) who voluntarily obtained SARS-CoV2 antibody testing, and if indicated, antigen testing. The study determined that there is a significant decrease in the prevalence of SARS-CoV2 antigen among employees at LLUH compared to the community.

Methods: Employee Health and Occupational Medicine offered antibody testing to employees who were considered high risk, primarily working in the Coronavirus Disease 19 (COVID-19) designated units. We tested 658 subjects' serum for the presence of IgM and IgG antibodies via the Nirmidas Qualitative SARS-CoV2 test. 29 subjects with a positive antibody test were subsequently tested for the presence of serum SARS-CoV2 antigen via PCR.

Results: There were 31 subjects who tested positive for IgM or IgG antibodies. 11 subjects had positive IgM with negative IgG. 3 subjects had negative IgM with positive IgG. 15 patients had positive IgM and positive IgG. 2 subjects had positive IgM with negative IgG, were subsequently retested, and then found to have positive IgM and positive IgG.

Of those 31 subjects with a positive antibody test, 2 were not tested for the COVID-19 antigen, 1 had an inconclusive test, 23 tested negative, and 5 tested positive. Of those 5 positive for the antigen, 2 had symptoms and 3 did not report symptoms or did not use the symptom questionnaire.

The community prevalence of positive SARS-CoV2 antigen in San Bernardino is 0.37%, as of June 16. The prevalence of positive SARS-CoV2 antigen among LLUH employees is 0.03% and the prevalence of positive antibody is 0.18%. The value of z is -7.3206, p is < .00001. Thus, the result is significant at $p < .01$.

Conclusion: The results of this testing supports the efficacy of the early protective measures that LLUHS implemented in preparation for the pandemic. Such protective measures include: mandated face masks, symptoms screening, testing for SARS-CoV2 antibody or antigen on patients admitted, a dedicated COVID-19 section of the emergency department as well as inpatient units, etc. Given the statistical significance of this study, the protective bundle can be used as a template for preventative measures for future pandemics.

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