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COVID-19: ESSENTIAL WORKERS AND THE RISKS WE FACE

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PURPOSE: The COVID-19 pandemic has affected the United States of America more than any other country.\(^1\) However, West Virginia ranks in the lower quartile with 4,950 cases per 100,000 as of December 31, 2020.\(^2,3\) Serological testing for antibodies identifies prior viral exposure and, potentially, immunity, although recent studies have indicated that SARS-CoV-2 antibodies can decline over time.\(^4,5\) Our hypothesis was that healthcare workers in Charleston, WV would have a higher prevalence of COVID 19 antibodies compared to other community essential workers. We also hypothesized that working in a unit providing care directly to COVID positive patients would be the highest risk factor. Our study investigates prevalence of SARS-CoV-2 antibodies in West Virginia essential workers and demographics associated with positive rates.

METHODS: Between September and December 2020, blood samples were tested for SARS-CoV-2 IgG antibodies from 1081 essential workers in Charleston, WV in a variety of occupations. Equivocal results were included in the positive tests. In addition, a questionnaire was obtained describing history of symptoms, contact exposures, prior testing, and employment information. Healthcare workers (HCW) was defined as those working in the medical profession including Emergency Medical Services (EMS) personnel with direct patient care with COVID-19 patients. Community Essential Workers (CEW) included law enforcement, firefighters, restaurant workers, teachers, and grocery workers. Descriptive statistics, Fisher’s exact test, and Chi square were performed with SAS 9.4.

RESULTS: A total of 458 HCW and 623 CEW were enrolled (n=1081). Of those that responded, 20.5% thought they had contracted COVID-19 with only 4.7% of our study population reporting testing positive for COVID on a PCR test. The overall positive antibody rate in our study population was 7.8% while the cumulative reported infection rate for West Virginia at the same time was 4.9%. Of 84 (7.8%) positive results, 25.0% were previously tested for COVID-19 infection and were negative, 50.0% tested positive, and 25.0% were not previously tested. We found no statistically significant difference (p>0.05) in risk for developing COVID antibodies based on gender, living situation (single or roommate) or between HCW on COVID units vs non-COVID units. However, HCW were found to have almost twice the positive antibody rate compared to CEW (10% vs 5.8%). Just being previously tested for COVID, regardless of the result, increased your chance of having antibody from 4.4% to 11.9%. Interestingly, only 26% of participants that believed they have previously been infected were found to have reactive antibodies.

CONCLUSIONS: In the fall of 2020, essential workers had a nearly 50% higher incidence of SARS-CoV-2 antibodies than what the incidence was reported at that time in WV, with HCW having a statistically significant higher risk than CEW. However, working in a COVID unit was not the driving factor of this difference suggesting intra-hospital spread. We hope to further characterize these groups with reported behaviors in hygiene as well as following antibody rates over time.

CLINICAL IMPLICATIONS: Essential workers in late 2020 had an increased risk of COVID 19 compared to the general public with healthcare workers having a significantly higher risk than other community essential workers.

DISCLOSURES: No relevant relationships by Rayan Ihle, source=Web Response
No relevant relationships by Syed Mahmood, source=Web Response

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