Risk Factors of SARS-CoV-2 Antibodies in Arapahoe County First Responders—The COVID-19 Arapahoe SErosurveillance Study (CASES) Project

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Objectives:

Define the seroprevalence and risk factors for SARS-CoV-2 antibodies in Arapahoe County, Colorado first responders (eg, law enforcement, human services, fire departments).

Methods:

Two hundred sixty four first responders were enrolled June to July 2020. SARS-CoV-2 seropositivity was defined as detection of immunoglobulin G (IgG) antibodies to both spike receptor binding domain and nucleocapsid in venous blood by validated enzyme-linked immunosorbent assay. We compared risk factors for being seropositive versus seronegative.

Results:

4% (11/264) were SARS-CoV-2 seropositive. Seropositive participants were significantly more likely to have lung disease (% seropositive, % seronegative; P-value) (36%, 8%; P = 0.01), prior SARS-CoV-2/COVID-19 testing (36%, 8%; P ≤ 0.01), a prior positive result (18%, less than 1%), and to believe they previously had COVID-19 (64%, 15%; P < 0.01). Only 15% of those believing they had COVID-19 had anti-SARS-CoV-2 antibodies.

Conclusions:

Human services employees and individuals with lung disease are at SARS-CoV-2 exposure risk. Few individuals believed they had COVID-19 had prior exposure.