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Background

- SARS-CoV-2 infection increased morbidity and mortality rates in persons with underlying comorbidities.
- Exposure and infection rates were significant in persons working in long-term care facilities (LTCFs).
- Staff members at ten long-term care facilities throughout the state of New Jersey were tested for SARS-CoV-2 antibodies and surveyed about comorbid health conditions.

Objective

- This study aims to evaluate the association between comorbidities and SARS-CoV-2 infection among LTCF staff.

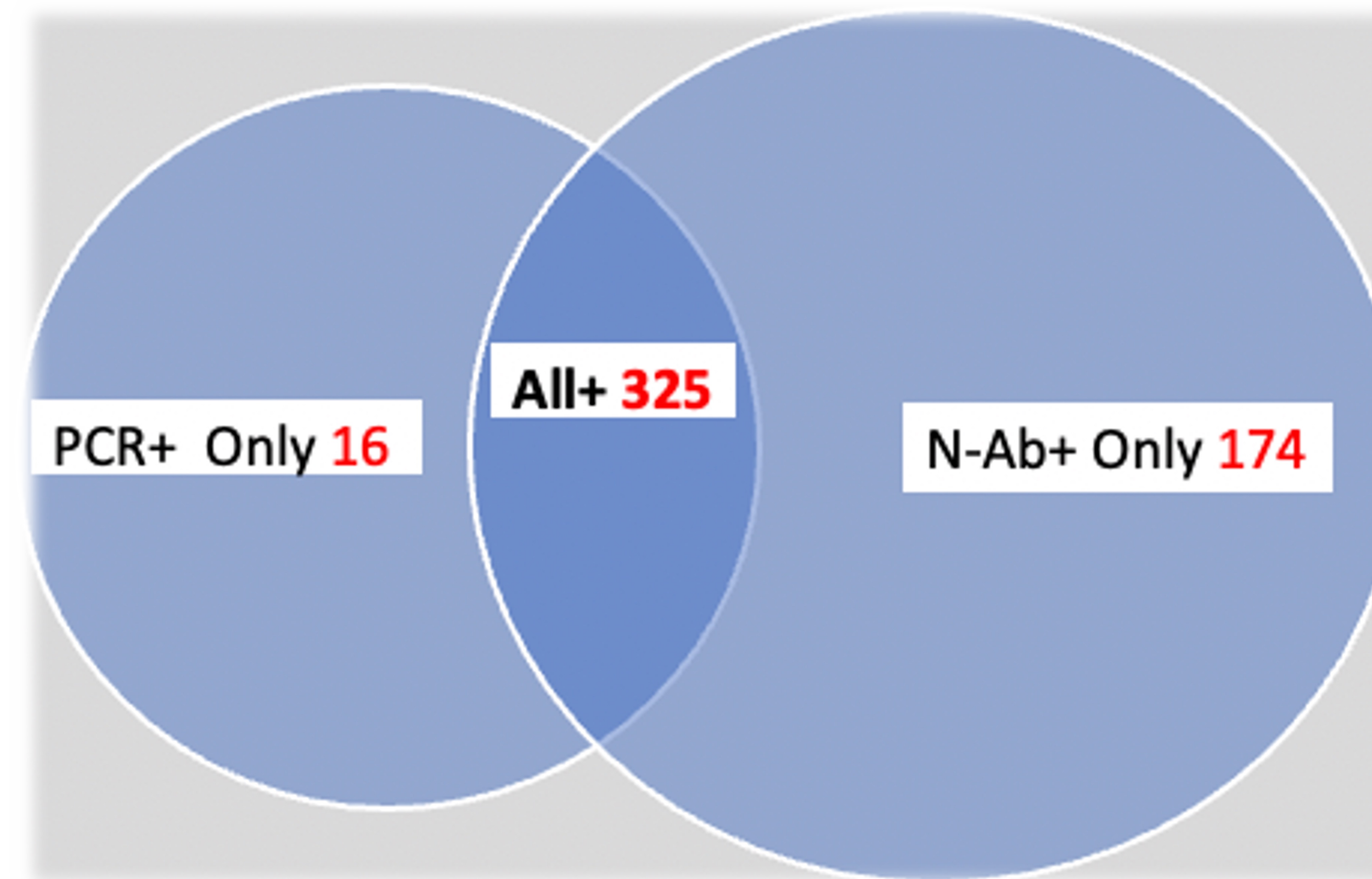
Methods

- Cross-sectional survey of antibodies to SARS-CoV-2 in staff at ten LTCFs.
- Evidence of prior infection was determined by prior positive SARS-CoV-2 PCR or antigen, or serological presence of IgG/IgM antibodies to Nucleocapsid Protein (N-Ab).
- Multivariate logistic regression was utilized to determine association of comorbidities and SARS-CoV-2 infection history.

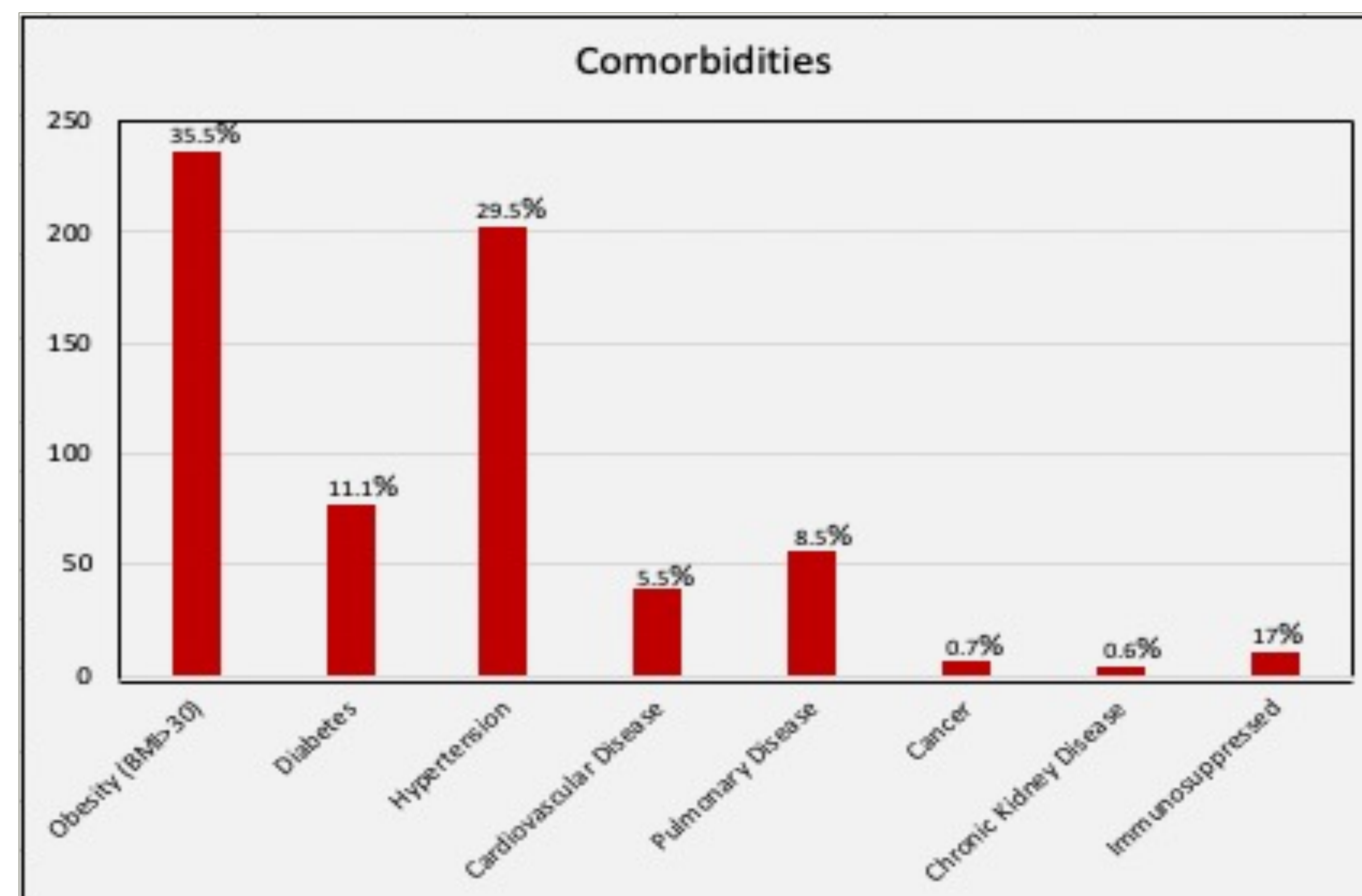
Results

- Serology was available on 667 staff members.
- 325 (48.7%) had a history of SARS-CoV-2 infection.
- 16 of the 325 with history of PCR/Antigen positive without N-Ab positivity.

SARS-CoV-2 Positivity (N=325)



Most common comorbidities in staff (N=667)



Odds Ratios (unadjusted and adjusted) for comorbid conditions and evidence of prior SARS-CoV-2 infection

Comorbidities	Unadjusted OR	95% CI	p-Value	Adjusted OR	95% CI	p-Value
Obesity (BMI>30)	1.059	0.739, 1.518	0.754	1.117	0.773, 1.614	0.555
Diabetes	1.125	0.809, 2.511	0.224	1.286	0.716, 2.309	0.4
Hypertension	1.304	0.882, 1.928	0.184	1.19	0.778, 1.819	0.422
Cardiovascular Disease	0.641	0.299, 1.376	0.254	0.655	0.298, 1.437	0.291
Pulmonary Disease	0.473	0.214, 0.928	0.029	0.525	0.265, 1.037	0.064
Cancer	0.271	0.026, 2.767	0.271	0.383	0.038, 3.874	0.416
Chronic Kidney Disease	0.421	0.037, 4.833	0.487	0.463	0.040, 5.362	0.538
Immunosuppressed	0.399	0.043, 3.699	0.419	0.415	0.043, 3.961	0.445
Smoking Status	Unadjusted OR	95% CI	p-Value	Adjusted OR	95% CI	p-Value
Yes	0.46	0.266, 0.793	0.005	0.531	0.304, 0.927	0.026

Conclusion

- In this survey of ten geographically diverse LTCFs across New Jersey, 49% of the staff demonstrated evidence of prior SARS-CoV-2 infection.
- Comorbid health conditions recorded in this study did not show significant correlation with evidence of prior infection with SARS-CoV-2 in LTCF staff.
- The results of this study support smokers were significantly less likely (approximately half as likely) to have evidence of prior SARS-CoV-2 infection compared to non-smoker, even after adjusting for age, gender, and race/ethnicity.