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Prevalence of Health Care and Hospital Worker SARS-CoV-2 IgG Antibody in a Pediatric Hospital

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Abbreviations: CAPR: Controlled Air-Purifying Respirator, HCHW: healthcare and hospital workers, PPE: personal protective equipment, RT-PCR: real-time reverse transcription-polymerase chain reaction, SARS-CoV-2: severe acute respiratory syndrome coronavirus 2

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Contributor Statements:

Ms. Tokareva assisted with study design, coordinated specimen collection, participated in interpretation of study data and drafted the manuscript.

Dr. Englund conceptualized and designed the study, assisted with specimen collection, participated in interpretation of study data and contributed towards critical revision of the manuscript.

Dr. Dickerson assisted with study design, analyzed specimens, participated in interpretation of study data and contributed towards critical revision of the manuscript.

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Dr. Zerr conceptualized and designed the study, participated in interpretation of study data and contributed towards critical revision of the manuscript.

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Ms. Strelitz conceptualized and designed the study, participated in interpretation of study data and contributed towards critical revision of the manuscript.

Dr. Eileen Klein conceptualized and designed the study, assisted with specimen collection, carried out data analysis, participated in interpretation of study data and drafted the manuscript.

Abstract

Objective: Asymptomatic transmission of COVID-19 in healthcare settings is not well understood. This study aimed to determine prevalence of SARS-CoV-2 IgG antibody in healthcare and hospital workers (HCHW) and assess how antibody levels change over time.

Patients and Methods: Cross-sectional study of employed HCHW at a freestanding, urban pediatric tertiary care hospital. Asymptomatic employed HCHWs ≥18 who worked in clinical hospital locations were eligible to participate. Participants completed blood draws and surveys at baseline (between 5/4/2020 and 6/2/2020) and two months later (between 7/6/2020 and 8/7/2020). Surveys collected demographic information, SARS-CoV-2 exposures, and previous COVID-19 diagnosis.

Results: In total, 530 participants enrolled and completed baseline study activities. Median age was 37 years (range 19-67 years), 86% identified as female, and 80% identified as White. Two months later, 481 (91%) HCHW completed another survey and blood draw. Four of five (0.9%) seropositive subjects at baseline remained seropositive at 2 months, although three had decreasing IgG indices. Five (1.0%) seropositive individuals, including four previous and one new seropositive subject, were detected two months later. History of positive SARS-CoV-2 PCR testing ($p<0.001$) and history of COVID-19 exposure ($p<0.001$) were associated with presence of SARS-CoV-2 antibody.

Conclusions: SARS-CoV-2 antibody was detected in 1% of HCHW in an urban pediatric hospital, in a city with moderate SARS-CoV-2 prevalence. Participants with a known prior COVID-19 diagnosis showed a decline or loss of IgG antibody over 2 months. These results have implications for identifying those with previous exposure and ongoing public health recommendations for ensuring workplace safety.

Background

COVID-19 disease is caused by the novel viral pathogen SARS-CoV-2. Over 63 million infections have been diagnosed worldwide, with over 13 million cases in the United States alone.[1] Individuals infected with COVID-19 have disease severity ranging from asymptomatic infection to fatal illness. Those working in the hospital setting may be at increased risk for contracting COVID-19 compared to the general population.[2] Children infected with COVID-19 are suspected to be underrepresented in total COVID-19 case counts.[3] Healthcare and hospital workers (HCHW) in a pediatric setting may have unrecognized exposure to SARS-CoV-2 since children typically experience a milder course of illness or asymptomatic infection.[4, 5]

Workplace safety is contingent on an adequate supply of appropriate personal protective equipment (PPE), increased testing capacity, contact tracing, and potential development of new therapeutics and vaccines.[6] Previous studies suggest that SARS-CoV-2 virus specific IgG and IgM antibodies reach peak levels 17-19 and 20-22 days after symptom onset, respectively.[7] However, the duration and magnitude of antibody response for those with symptomatic and asymptomatic COVID-19 infection is unknown. This study tested pediatric HCHW at two time points to further understand infection rates, seroconversion, and the potential durability of SARS-CoV-2 IgG antibody as a measure of past infection.

Methods:

Employed HCHW at a 400-bed freestanding, urban pediatric tertiary care hospital were recruited to enroll in a SARS-CoV-2 IgG serology study beginning May 4, 2020. All staff members (including physicians, nurses, allied health professionals, pharmacists, social workers, mental health evaluators, security team members, child life specialists and environmental services staff)

were eligible to participate if they were over 18 years of age and worked in a clinical environment. Participants must have worked at least one shift in a clinical setting in the 14 days prior to enrollment and could not be experiencing any COVID-19-related symptoms (including cough, fever, sore throat, runny nose, body aches, chills, wheezing, shortness of breath, diarrhea, or vomiting) at the time of their blood draw. During this study, HCHW were also screened daily prior to entering the hospital and denied entry if they were experiencing any COVID-19 related symptoms. Through targeted emails and word-of-mouth recruitment, approximately 1000 physicians and staff working in clinical areas were invited to participate, with emphasis placed on the emergency department, ICU's, OR's, and inpatient units.

Serology specimens were obtained at two time points. Baseline blood draws took place at the hospital from May 4, 2020 through June 2, 2020 and two-month follow-up blood draws from July 6, 2020 through August 7, 2020. A vascular access nurse, or qualified study team member, obtained approximately 6 mL of blood in a de-identified serum tube from each participant. Blood was allowed to clot at room temperature for approximately one hour, refrigerated, and centrifuged within 24 hours. Serum was tested for SARS-CoV-2 antibody using the Abbott Architect SARS-CoV-2 IgG Assay, a qualitative test for IgG against the SARS-CoV-2 nucleoprotein. An antibody index >1.4 was considered positive per the manufacturer's instructions. The expected imprecision for this test is less than 5% coefficient of variation, thus a 1.4 index could be between 1.33-1.47 in this qualitative assay. Furthermore, in a study by Bryan, et al, the sensitivity of Abbott Architect SARS-CoV-2 IgG Assay 10 days after PCR positive testing was 97.2% (90.4-99.5%) and 17 days after positive PCR testing was 100% (95.5-100%).[8]

Participants completed a short survey at the time of each blood draw. The survey collected participant demographic information, current and recent symptoms, hospital role, typical work

location, known exposures, previous COVID-19 diagnosis, and medical history including immunosuppressant medication use or chronic underlying conditions. Participants were informed of their individual serology results from both tests one month after the second blood draw.

Demographic characteristics were described with means, ranges and percentages. Chi-squared testing was performed for evaluation of factors associated with positive SARS-CoV-2 IgG serology testing. This study was approved by the hospital Institutional Review Board.

Results

A total of 530 HCHW enrolled in the study and completed their baseline blood draw. The participant pool included 446 healthcare providers: 67 attending physicians, 8 fellows, 17 resident physicians, 95 advanced practice providers, 218 nurses, 15 clinical technicians, 26 respiratory therapists and 84 other hospital workers including social workers, mental health evaluators, security officers, pharmacists, and child life specialists (Table 1).

Overall, five (0.9%) of the 530 participants were SARS-CoV-2 IgG seropositive at baseline. Three participants reported previous positive SARS-CoV-2 PCR testing, and two of these were IgG seropositive. Four participants with no previous history of positive SARS-CoV-2 testing reported living with someone who had been diagnosed with COVID-19, and one of these participants was IgG seropositive. Two participants with no household exposures and no previous positive SARS-CoV-2 PCR tests were IgG seropositive at baseline. History of positive SARS-CoV-2 PCR testing was associated with presence of SARS-CoV-2 antibody ($p<0.001$), as was history of exposure to a household contact who was previously diagnosed with COVID-19 ($p<0.001$).

A total of 481 (91%) HCHW participated in the two-month blood draw. Five (1.0%) tested SARS-CoV-2 IgG seropositive, including four of the five previously positive and one newly positive (Table 2). The three participants with prior positive SARS-CoV-2 PCR testing showed decreased antibody indices at the second blood draw compared to the first. Antibody indices for the three previously positive SARS-CoV-2 PCR participants at baseline and 2 months decreased from 2.4 to 1.48, 1.91 to 1.28, and 1.32 to 0.32, respectively. Two of these 3 participants had IgG antibody titers above the seropositive threshold of 1.4 at baseline, and only one remained seropositive at 2 months. The three participants without prior positive SARS-CoV-2 PCR testing who were IgG seropositive at baseline remained IgG seropositive. One had an increased antibody index, while two others had decreased antibody indices, which changed from 1.57 to 1.86, 3.05 to 2.4, and 1.5 to 1.43 at baseline and two months, respectively. Only one participant was newly SARS-CoV-2 IgG seropositive at the second blood draw with no reported household exposures, with antibody indices of 1.35 at baseline and 1.43 at two months (Table 2).

SARS-CoV-2 IgG seropositivity in HCHW was similar to the rate of SARS-CoV-2 IgG seropositivity in the hospital pediatric population. At baseline in May 2020, 0.9% of HCHW were IgG seropositive compared with 1.0% of a convenience sample of 1076 children evaluated in March and April 2020.[3] To provide further context for these results, 0.7% of hospitalized pediatric patients undergoing diagnostic RT-PCR testing were positive for SARS-CoV-2 in May 2020 (internal testing data), compared to detection rates of 1.3% in hospital employees (internal testing data) and 5% in residents of the surrounding County (public data). In July 2020, 1.1% of hospitalized pediatric patients were positive for SARS-CoV-2 by PCR compared to 2.0% of hospital employees, and 3.8% of nearby County residents (Figure 1).[9]

Discussion

One percent of HCHW employed in the pediatric hospital clinical setting tested for SARS-CoV-2 IgG antibody showed evidence of IgG seroconversion in the summer of 2020. Of the five HCHW who had antibody detected at baseline, all but one had waning IgG indices two months later. Further, 2.3% of participants working in the ED tested positive, whereas 0.01% of non-ED personnel tested positive, identifying the ED as a likely higher risk clinical location. Our findings have implications for rates of viral transmission to HCHW in the pediatric health care setting, as well as for ongoing identification of past infection and for public health recommendations.

This study was carried out in a pediatric hospital with moderate rates of COVID-19 disease and in the presence of adequate PPE including gowns, gloves, masks, face shields and CAPRs throughout the hospital. Additionally, each room in the emergency department is negative pressure, which allows for rapid clearance of aerosolized viral particles when the doors remain closed. These factors may have influenced the low SARS-CoV-2 seroprevalence rate. In comparison, a study of 40,329 healthcare workers in New York City found an overall seropositivity of 13.7%. Performed during a time of high rates of SARS-CoV-2 circulation and using seven different antibody assays with varying sensitivity and specificity, this study showed a 93.5% seropositivity in those with previous positive PCR testing, and 9% seropositivity in those without known previous exposure.[10] Additionally, in a point prevalence serology study within the largest hospital system in the United Kingdom, serum from 515 healthcare workers obtained in a 24-hour period showed a seropositivity rate of 24.4% using a laboratory-developed ELISA assay, with a rate of 37.5% in those with previous symptoms, and 17.1% in those with no previous symptoms.[11]

Our results are similar to several studies of healthcare workers caring for hospitalized and older patients. In a study of healthcare workers in China, antibody prevalence in 77 healthcare workers with no exposure history all tested negative for SARS-CoV-2 IgG antibody.[12] Another study of seroprevalence in healthcare workers in a New Jersey intensive care unit documented one case (0.83%) of asymptomatic seroconversion in the 121 healthcare workers who were exposed to critically ill COVID-19 patients.[13] In our study, four out of the five participants with detectable IgG levels at baseline had decreased IgG indices at the 2-month draw. Waning of IgG indices in this study is consistent with a study of 37 SARS-CoV-2 PCR positive individuals in China where IgG levels waned as the patients moved into the convalescent phase of illness.[14] Similar results were found in a study at the University of Washington of 34 individuals who had recovered from asymptomatic COVID-19 infections. In that group, neutralizing antibody titers declined four-fold on average from one to four months post-symptom onset.[15] A recent MMWR publication found that among 156 healthcare workers at 13 hospitals in 12 states with positive SARs-CoV-2 testing and baseline antibody testing, 94% had a decline of antibody levels at repeat testing 60 days later and 28% seroconverted to below the level of positivity.[16]

The use of PPE may play an important role in seroconversion of healthcare workers. The association between universal masking and SARS-CoV-2 positivity was evaluated among healthcare workers at the Massachusetts General Brigham Hospital, where workers were tested by RT-PCR if they reported any COVID-19 related symptoms. The rate of positive tests decreased from 14.7% to 11.5% after universal masking was utilized.[17] In a study of community health workers counseling COVID-19 contacts in Chennai, India, 19% of 62 community health workers wearing masks, gloves, shoe covers, and using hand sanitizer were infected after visiting >5,800 homes. After the addition of face shields, none of the remaining 50 workers were infected

after visiting >18,000 homes.[18] These studies demonstrate low rates of SARS-CoV-2 infection with appropriate PPE use. At the pediatric hospital where this study was conducted, masks were initially in critically short supply and guidance evolved over time. Beginning March 27, 2020, masks and eye protection were required for evaluation of all patients unless a respirator was indicated (for patients considered high risk for COVID-19 or if an aerosol generating procedure was being performed on a patient with unknown infection status). Universal masking throughout the hospital was instituted for staff, patients, and families beginning May 6, 2020, just prior to the start of enrollment for this study.

This study is limited as it was completed at a single pediatric hospital with infrastructure, PPE availability and local guidance regarding PPE and safety practices that may not be generalizable to other types of hospitals or geographic locations. Furthermore, our understanding of changes in antibody concentrations over time is limited by the small number of IgG seropositive participants. Lastly, it is important to note that HCHWs may have different risk-associated behaviors in the community than the community population at large, which may contribute towards the relatively low seropositivity observed in HCHWs.

In a well-resourced, free-standing pediatric hospital in a city with moderate community levels of COVID-19 infection, SARS-CoV-2 IgG seroconversion of frontline healthcare workers was low and antibody levels waned over time. These results have implications for identifying those with previous exposure and ongoing public health recommendations for ensuring workplace safety. Despite evidence of waning antibodies over time, IgG testing may be advantageous to repeated PCR testing for epidemiological purposes as it is more practical logistically, less costly, would require fewer tests, and would decrease selection bias if personnel are only testing with PCR when symptomatic.

References

1. COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at John Hopkins University (JHU). Johns Hopkins Coronavirus Resource Center. Published 2020. Accessed November 30, 2020. https://coronavirus.jhu.edu/map.html.
2. Chen Y, Tong X, Wang J, et al. High SARS-CoV-2 antibody prevalence among healthcare workers exposed to COVID-19 patients. *J Infect.* 2020;81(3):420-426. doi:10.1016/j.jinf.2020.05.067
3. Dingens AS, Crawford KHD, Adler A, et al. Serological identification of SARS-CoV-2 infections among children visiting a hospital during the initial Seattle outbreak. *Nature Communications*. July 2020. In press. doi:10.1101/2020.05.26.20114124
4. Du H, Dong X, Zhang JJ, et al. Clinical characteristics of 182 pediatric COVID-19 patients with different severities and allergic status [published online ahead of print, 2020 Jun 10]. *Allergy*. 2020;10.1111/all.14452. doi:10.1111/all.14452
5. Shane AL, Sato AI, Kao C, et al. A Pediatric Infectious Disease Perspective of SARS-CoV-2 and COVID-19 in Children [published online ahead of print, 2020 Aug 25]. *J Pediatric Infect Dis Soc*. 2020;piaa099. doi:10.1093/jpids/piaa099
6. Altmann DM, Douek DC, Boyton RJ. What policy makers need to know about COVID-19 protective immunity. *The Lancet*. 2020;395(10236):1527-1529. doi:10.1016/S0140-6736(20)30985-5
7. Azkur AK, Akdis M, Azkur D, et al. Immune response to SARS-CoV-2 and mechanisms of immunopathological changes in COVID-19. *Allergy*. 2020;75(7):1564-1581. doi:10.1111/all.14364
8. Bryan A, Pepper G, Wener MH, et al. Performance Characteristics of the Abbott Architect SARS-CoV-2 IgG Assay and Seroprevalence in Boise, Idaho. *Journal of Clinical Microbiology*. 2020;58(8):e00941-20. doi:10.1128/JCM.00941-20
9. Daily COVID-19 outbreak summary. King County. Published 2020. Accessed November 30, 2020. https://www.kingcounty.gov/depts/health/covid-19/data/daily-summary.aspx.
10. Moscola J, Sembajwe G, Jarrett M, et al. Prevalence of SARS-CoV-2 Antibodies in Health Care Personnel in the New York City Area [published online ahead of print, 2020 Aug 6]. JAMA. 2020;e2014765. doi:10.1001/jama.2020.14765
11. Shields AM, Faustini SE, Perez-Toledo M, et al. SARS-CoV-2 seroconversion in health care workers. Preprint. *medRxiv* 2020;05.18.20105197. Published 2020 May 19. doi:10.1101/2020.05.18.20105197
12. Liu M, Cheng SZ, Xu KW, et al. Use of personal protective equipment against coronavirus disease 2019 by healthcare professionals in Wuhan, China: cross sectional study. *BMJ*. 2020;369:m2195. Published 2020 Jun 10. doi:10.1136/bmj.m2195
13. Mughal MS, Kaur IP, Patton CD, Mikhail NH, Vareechon C, Granet KM. The prevalence of severe acute respiratory coronavirus virus 2 (SARS-CoV-2) IgG antibodies in intensive care unit (ICU) healthcare personnel (HCP) and its implications-a single-center, prospective, pilot study [published online ahead of print, 2020 Jun 12]. *Infect Control Hosp Epidemiol.* 2020;1-2. doi:10.1017/ice.2020.298

14. Long QX, Tang XJ, Shi QL, et al. Clinical and immunological assessment of asymptomatic SARS-CoV-2 infections. *Nat Med*. 2020;26:1200-1204. doi:10.1038/s41591-020-0965-6
15. Crawford KHD, Dingens AS, Eguia R, et al. Dynamics of neutralizing antibody titers in the months after SARS-CoV-2 infection. Preprint. *medRxiv*. Published 2020 August 7. doi:https://doi.org/10.1101/2020.08.06.20169367
16. Self WH, Tenforde MW, Stubblefield WB, et al. Decline in SARS-CoV-2 Antibodies After Mild Infection Among Frontline Health Care Personnel in a Multistate Hospital Network - 12 States, April-August 2020. MMWR Morb Mortal Wkly Rep. 2020;69(47):1762-1766. Published 2020 Nov 27. doi:10.15585/mmwr.mm6947a2
17. Wang X, Ferro EG, Zhou G, Hashimoto D, Bhatt DL. Association Between Universal Masking in a Health Care System and SARS-CoV-2 Positivity Among Health Care Workers [published online ahead of print, 2020 Jul 14]. *JAMA*. 2020;e2012897. doi:10.1001/jama.2020.12897
18. Bhaskar ME, Arun S. SARS-CoV-2 Infection Among Community Health Workers in India Before and After Use of Face Shields [published online ahead of print, 2020 Aug 17]. JAMA. 2020;e2015586. doi:10.1001/jama.2020.15586

Table 1: Participant demographics at baseline enrollment

	Work location								Healthcare Role					
	ED		ICU		Urgent Care		Other[a]		Provider[b]		Other[c]		Total enrolled	
Mean Age	37.1 [22, 64]		36.4 [22, 67]		38.4 [24, 65]		37.3 [19, 65]		37.5 [21, 67]		35.0 [19, 62]		37.1 [19, 67]	
Gender[d] (n)	143 F / 33 M		111 F / 22 M		34 F / 3 M		166 F / 17 M		386 F / 60 M		68 F / 15 M		454 F/ 75 M	
% Female	80.8		83.5		91.9		90.7		86.5		81.0		85.7	
% Male	18.7		16.5		8.1		9.3		13.5		17.9		14.2	
Race														
Total	**n=177**	**%**	**n=133**	**%**	**n=37**	**%**	**n=183**	**%**	**n=446**	**%**	**n=84**	**%**	**n=530**	**%**
American Indian/Alaska Native	1	0.6	0	0.0	0	0.0	3	1.6	2	0.4	2	2.4	4	0.8
Asian	31	17.5	14	10.5	3	8.1	11	6.0	47	10.5	12	14.3	59	11.1
Native Hawaiian/Other Pacific Islander	1	0.6	0	0.0	0	0.0	1	0.5	2	0.4	0	0.0	2	0.4
Black/African American	3	1.7	0	0.0	1	2.7	5	2.7	5	1.1	4	4.8	9	1.7
White	132	74.6	109	82.0	29	78.4	153	83.6	366	82.1	57	67.9	423	79.8
Other	6	3.4	3	2.3	0	0.0	2	1.1	6	1.3	5	6.0	11	2.1
More than one race	2	1.1	6	4.5	2	5.4	8	4.4	17	3.8	1	1.2	18	3.4
Prefer not to say	1	0.6	1	0.8	2	5.4	0	0.0	1	0.2	3	3.6	4	0.8
Ethnicity														
Hispanic/Latino	17	9.6	5	3.8	4	10.8	15	8.2	26	5.8	15	17.9	41	7.7
Not Hispanic/Latino	159	89.8	128	96.2	32	86.5	168	91.8	419	93.9	68	81.0	487	91.9
Prefer not to say	1	0.6	0	0.0	1	2.7	0	0	1	0.2	1	1.2	2	0.4

[a] Includes PACU/OR, inpatient wards, outpatient clinics, critical care transport, and other locations

[b] Includes physicians (attending, fellow, resident), nurses, advanced practice providers, respiratory therapists, and clinical technicians

[c] Includes social workers, mental health evaluators, security officers, pharmacists, child life specialists, and others

[d] One participant declined to answer

Table 2: SARS-CoV-2 PCR and IgG seropositives

Case #	Age	Gender	Hospital Role	Area of work	Previous COVID-19 PCR diagnosis [baseline draw]	Household exposure at baseline	Baseline result [index][a]	Household exposure at 2 months	2 month result [index]
1	30	Female	Nurse	ED	No	No	Positive [1.57]	No	Positive [1.86]
2	40	Female	Respiratory therapist	ICU	No	Yes	Positive [3.05]	Yes	Positive [2.4]
3	30	Female	Advanced practice provider	Other	No	No	Positive [1.50]	No	Positive [1.43]
4	43	Female	Nurse	ED	No	No	Negative [1.35]	No	Positive [1.43]
5	39	Female	Attending physician	ED	Yes [47 days prior]	No	Positive [2.40]	No	Positive [1.48]
6	45	Female	Nurse	ED	Yes [58 days prior]	No	Positive [1.91]	No	Negative [1.28]
7[b]	31	Female	Advanced practice provider	Other	Yes [71 days prior]	No	Negative [1.32]	Yes	Negative [0.32]

[a] Lowest "detected" index = 1.40

[b] Although seronegative, included in table due to previous COVID-19 PCR diagnosis

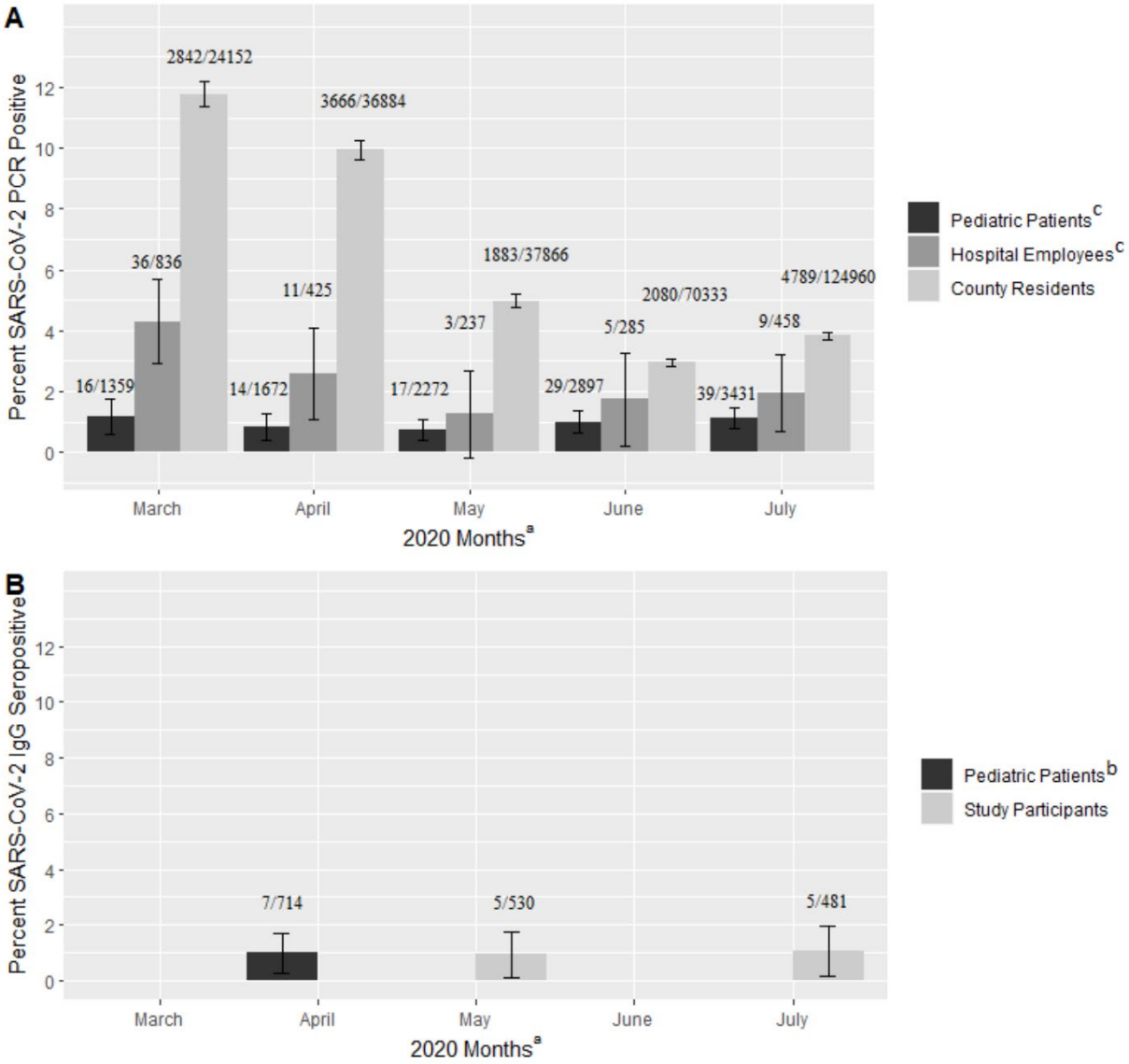

Figure 1: Comparison of SARS-Cov-2 PCR positivity (A) and IgG antibody seropositivity (B) within an urban pediatric hospital and the surrounding county

a. February data: 0 out of 2 pediatric patients tested positive, no hospital employees tested, 6 out of 8 (75%) surrounding county residents tested positive. Data not included due to strict testing criteria and few tests done.
b. A subset of pediatric patients tested by PCR were also tested retrospectively in April for IgG antibody. Approximately 1.0% of pediatric patients had at least one seropositive sample.
c. Internal testing data

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