

# Repeated Assessment of SARS-CoV-2 Sero-prevalence among Health Care Workers early in the Pandemic - Relationship to Workplace Exposures

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## BACKGROUND

- Early in the pandemic, health care workers (HCWs) were at risk of SARS-CoV-2 infection from their patients and maintained household social distancing.
- This study aimed to estimate the 8-month seropositivity rate of a HCW cohort and associations with hospital and community SARS CoV-2 exposures.

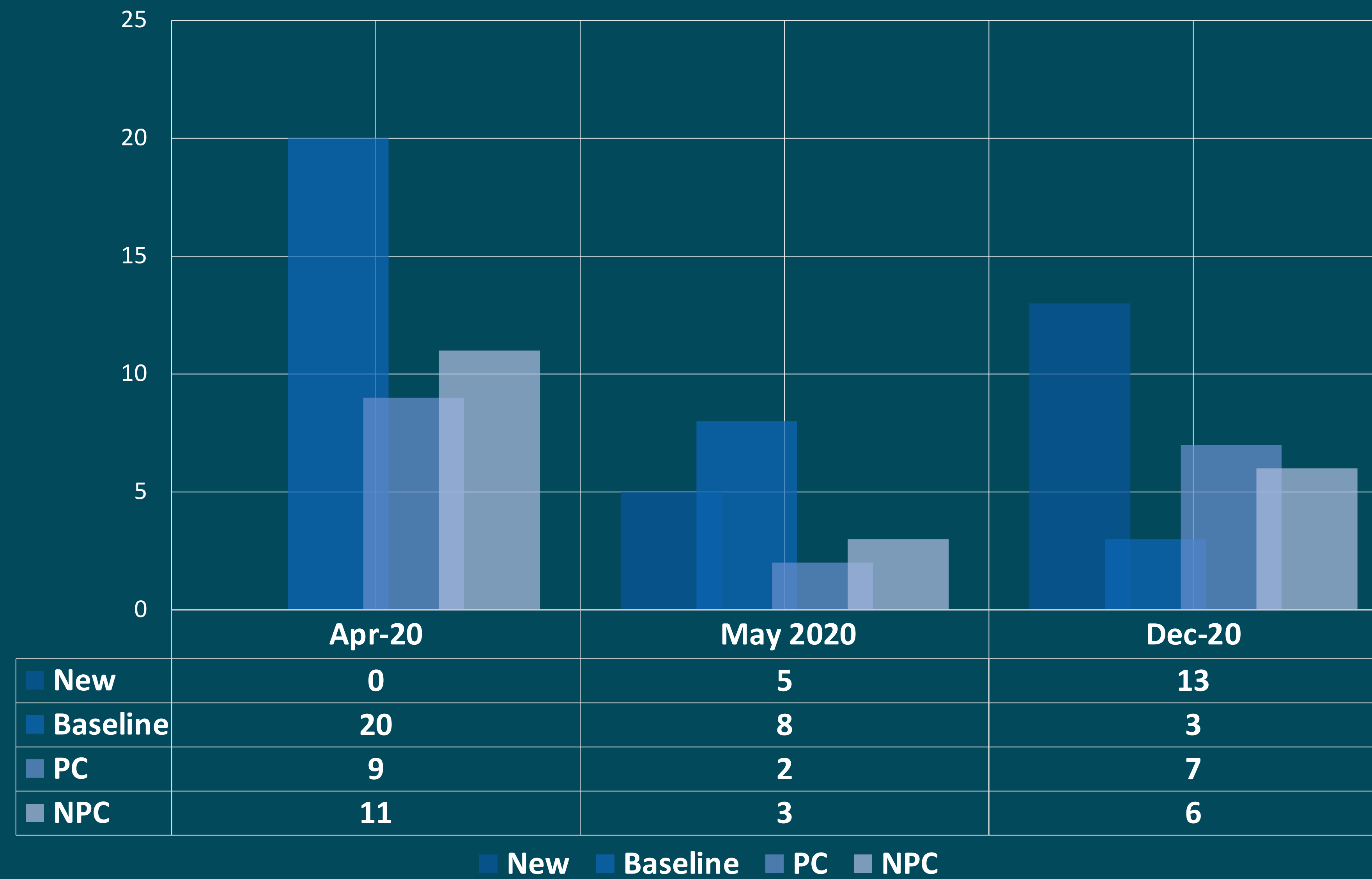
## METHODS

- Cross sectional study of 200 patient care (PC) and non-patient care (NPC) HCWs conducted from April-Dec 2020 at Hurley Medical Center, Flint, MI
- The first MI case of SARS-CoV-2: March 10, 2020.
- HCWs were tested for total serum SARS-CoV-2 anti-spike protein antibody and completed a survey questionnaire in April, May and December on demographics, travel history, job characteristics, in and out of hospital SARS-CoV-2 exposures, and use of PPE
- Fisher's exact test and Student t-test were used to determine associations with SARS-CoV-2 antibody status for categorical and continuous variables, respectively.

## DISCUSSIONS

- At baseline 20/192 (10.4%) were seropositive at beginning of survey with 9/20 (45%) providing direct PC. Initial survey completion rate was 79.6%
- 8 weeks later, 13/131 (9.9%) were positive of which 5/13 (38.4%) were new seroconversions, 2/5 (40%) in PC.
- 8 months after the initial draw, 16/120 (13.3%) were positive with 13/16 (81.3%) new, 7/13 in PC (54%).
- The number of HCWs who tested positive at any time during the study was 38/192 (19.8%).

Seroconversion rate and trends



Comparison of selected variables and their association with SARS-CoV-2 antibody seroconversion status

Variable	Ab + n (%)	Ab - n (%)	p-value*
Direct Patient Care	54 (61.4)	5 (45.5)	0.344
Traveled Outside Michigan	92 (94.8)	12 (100.0)	0.552
Working in a COVID Unit	27 (27.8)	6 (50.0)	0.179
Inpatient Contact	43 (44.3)	6 (50.0)	0.765
Inpatient COVID Contact	36 (37.1)	6 (50.0)	0.531
COVID/Viral Suggestive Symptoms	11 (11.3)	1 (9.1)	> 0.999

\* All p-values are based on a two-sided Fisher's exact test

- No statistically significant associations was noted between seroconversion and exposure risk variables at a threshold of  $p < 0.05$ .

## CONCLUSIONS

- No association between patient care exposures and SARS-CoV-2 antibody seroconversion.
- HCWs in non-patient care areas were as likely to test positive as those in patient care areas likely reflecting community prevalence.
- Universal masking at the medical center and use of full PPE to care for probable and confirmed COVID patients likely prevented higher rates of patient care acquisition

## SURVEY QUESTIONNAIRE

1. General job title at the medical center? (ex. Nurse, Doc, admin, EVS, RT, lab tech, PT/OT, clerk, etc)
2. Do you provide direct patient care?
3. Unit of primary work? (ex. gen floor, OB, radiology, ICU, office only)
4. Travel outside of MI since your last blood test in early April? Destination and month of travel?
5. Flight on an airplane? internationally flight? Overnight on cruise ship?
6. Patient physical contact in the hospital? COVID POSITIVE patients contact? COVID positive patients room entry?
7. Work on a COVID unit? COVID positive patient contact without PPE?
8. COVID or other viral related symptoms? Fever >100F, cough, body aches, shortness of breath, loss of taste or smell, diarrhea >3/day, sore throat, other symptoms
9. Sick in the 7 days before or at the time of blood test?
10. COVID nasal swab test since blood test? If yes, date and results?
11. COVID nasal swab test more than once? How many and results?
12. What is your COUNTY of residence?

### References:

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