



Infection with Coronavirus Disease 19 (COVID-19) in Healthcare Personnel with Exposure to COVID-19

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Introduction

- As of September 4, 2020, 153,364 cases and 683 deaths¹ due to Coronavirus Disease 19 (COVID-19) have been reported in healthcare personnel (HCP) in the United States
- Many HCP remain concerned that severe acute respiratory syndrome coronavirus (SARS-CoV-2) may be transmissible by the airborne route and that personal protective equipment may not be sufficient
- Thus, it is important to quantify the risk of acquiring COVID-19 in the healthcare setting

Objective

- To characterize the risk of infection among HCP exposed to patients or other HCP with confirmed COVID-19 at an academic medical center

Methods

- Design:** Retrospective cohort study
- Inclusion Criteria:** All HCP exposed to SARS-CoV-2 from March 15, 2020 to May 16, 2020
 - Exposure:** Contact with patients or other HCP with COVID-19 within 6 feet of distance for at least 90 seconds when HCP's eyes, nose, or mouth were not covered
- HCP with exposures were monitored for symptoms consistent with COVID-19 for 14 days from last exposure and those who developed symptoms were tested for SARS-CoV-2 using RT-PCR
- Outcome:** Positive RT-PCR for SARS-CoV-2

Results

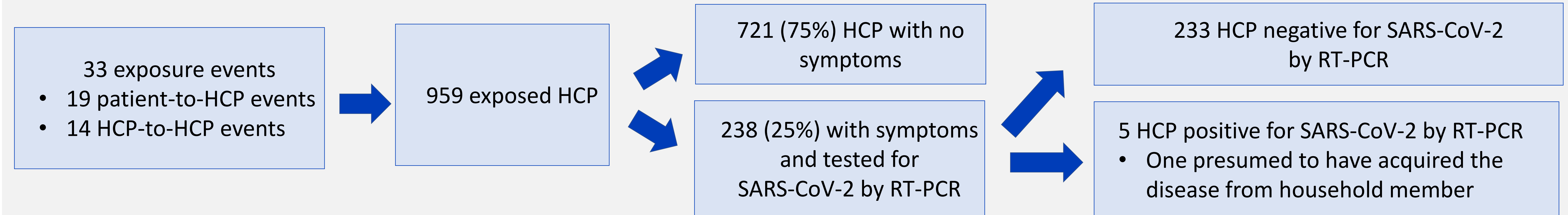


Figure 1. Outcomes of HCP Exposed to HCP or Patients with Confirmed COVID-19

	Total (n=238)	No COVID-19 infection due to occupational exposure (n=234)	COVID-19 infection due to occupational exposure (n=4)
Age	38.7 ± 9.7	38.6 ± 9.7	40.0 ± 12.1
Female	196 (82%)	192 (82%)	4 (100%)
Job Title			
Nurses	117 (49%)	114 (49%)	3 (75%)
Physicians, NP, PA	35 (15%)	35 (15%)	0
Nursing assistants	14 (6%)	14 (6%)	0
Environmental services	11 (4%)	10 (4%)	1 (25%)
Nutrition Services	28 (12%)	28 (12%)	0
Administrative	16 (7%)	16 (7%)	0
Technicians	4 (2%)	4 (2%)	0
Respiratory therapists	2 (1%)	2 (1%)	0
Other	11 (4%)	11 (5%)	0
No. of days testing was performed from exposure (mean ± SD)	7.1 ± 5.0	8.1 ± 4.9	10.5 ± 5.7

Table 1. Demographics and Job Titles of Healthcare Personnel Who Developed Symptoms and Were Tested for SARS-CoV-2 after a Known Occupational Exposure to COVID-19

Conclusions

- Despite numerous exposures among HCP, the risk of acquiring symptomatic COVID-19 in the healthcare setting was low with less than 1% of symptomatic HCP with occupational exposure subsequently diagnosed with COVID-19
- Because only symptomatic healthcare workers were tested, we cannot rule out that those who did not develop symptoms did not acquire COVID-19 after exposure
 - The lack of significant nosocomial outbreaks within our institution suggests that asymptomatic HCP transmission was limited
- Healthcare exposures will be further minimized with the adoption of universal masking and better access to personal protective equipment

References

- Centers for Disease Control and Prevention. COVID-19 Data Tracker. Accessed September 4, 2020