



VA

U.S. Department of Veterans Affairs
Veterans Health Administration
VA Northeast Ohio Healthcare System

Evaluation of Exposure History in Healthcare Personnel with Coronavirus 2019 Disease

Sandra Y. Silva, MD¹; Trina F. Zabarsky, CNP²; Thriveen S.C. Mana, BS¹; Davinder Bhullar, MD³; Bea Tabor³; Curtis J. Donskey, MD^{1,4}

1. Clinical and Translational Science Program, School of Medicine, Case Western Reserve University, Cleveland, OH; 2. Infection Control Department, Cleveland VA Medical Center; 3. Personnel Health, Cleveland VA Medical Center, Cleveland OH; 4. Geriatric Research Education and Clinical Center (GRECC), Cleveland VA Medical Center, Cleveland OH



#465

Contact: sys17@case.edu

BACKGROUND

- The Coronavirus Disease 2019 (COVID-19) pandemic poses an occupational health risk to healthcare personnel (HCP)
- In addition to infected patients, healthcare personnel are at risk for nosocomial acquisition of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from co-workers
- In a recent study from Greece approximately half of all high-risk exposures were to healthcare personnel with COVID-19
- There is an urgent need for additional information regarding sources of work-related exposure to SARS-CoV-2

METHODS

- A cohort study was conducted to examine exposure history of personnel with COVID-19 infection or asymptomatic carriage in a VA healthcare facility
- Personnel diagnosed with COVID were interviewed to identify potential exposures during a 4-month study period
- Exposures were categorized as contacts with patients, personnel, family members, or individuals in the community with COVID-19
- High-risk exposures were classified based CDC criteria

RESULTS

- 96 of 1,534 (6.3%) personnel with nasopharyngeal swabs collected had positive PCR results for SARS-CoV-2
- Of the 96 cases, 24 (25.0%) had a higher-risk exposure at work, including 18 exposures to COVID-19 patients and 6 exposures to infected personnel (Fig. 2)
- Exposures to infected patients were common early in the outbreak and often occurred when recognition of COVID-19 was delayed due to absence of fever and atypical presentations

RESULTS

- All higher-risk exposures to COVID-19 patients occurred on non-COVID-19 wards
- Table 1 provides a summary of 6 higher-risk and 10 lower-risk exposures of personnel with COVID-19 to other staff members with COVID-19
- Exposures to infected personnel often involved noncompliance with facemask use in nonclinical shared areas such as break rooms or during activities such as meals when facemasks were removed

Figure 1. Number of COVID-19 positive cases at the Cleveland Veterans Affairs Medical Center among patients and personnel

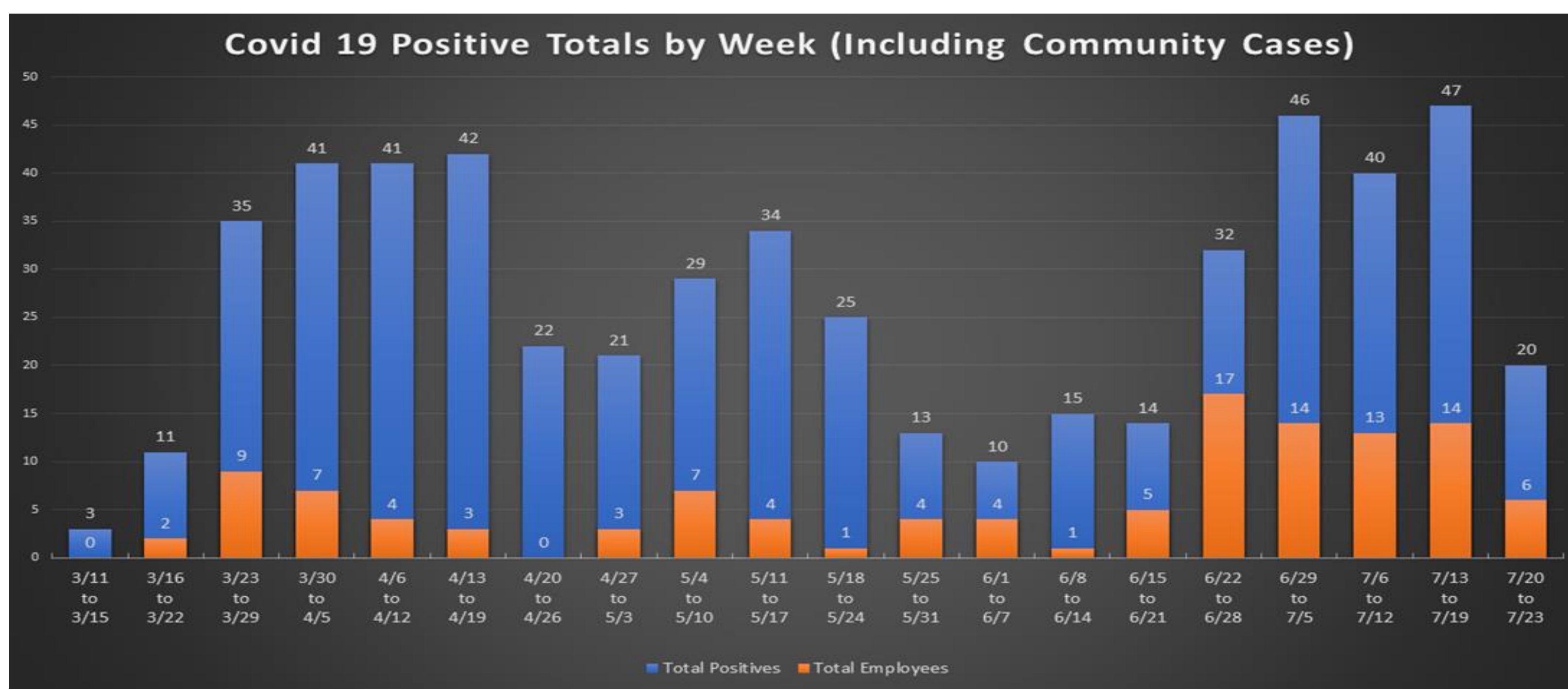


Figure 2. Number of higher-risk exposures to known COVID-19 cases over the course of the study by exposure category.

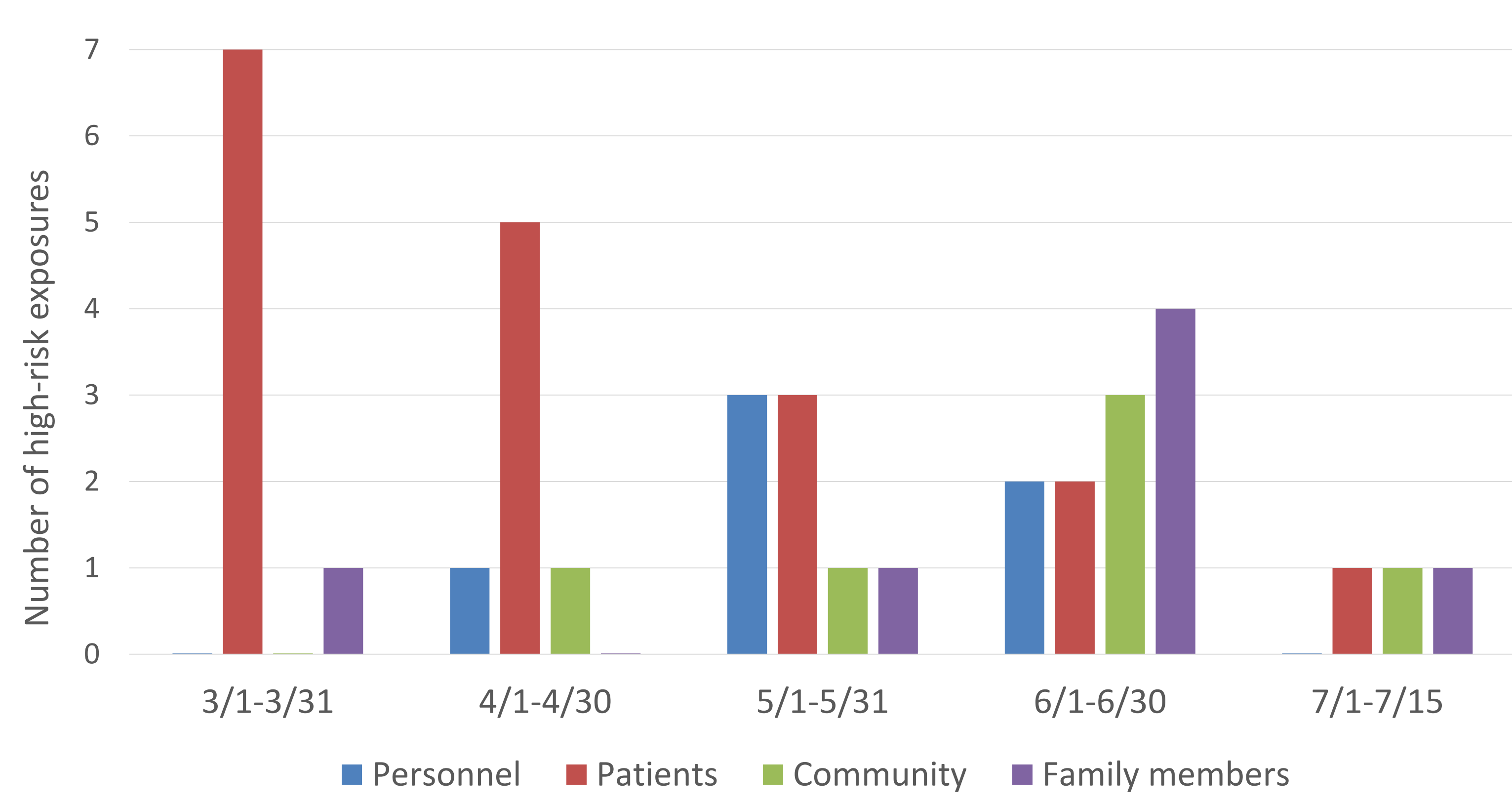


Table 1. Summary of 16 exposures to personnel infected with COVID-19 for personnel subsequently diagnosed with COVID-19

Occupation of COVID-19 case	Occupation of COVID-19 exposure source	Date of source case diagnosis with COVID-19	Symptomatic at time of exposure? Yes/No (symptoms)	Type of exposure
Definite higher-risk exposure to personnel with COVID-19*				
Registered nurse	Registered nurse	4/2/20	Yes (diarrhea, sore throat)	Worked together in office including unmasked contact
Registered nurse	Registered nurse	5/20/20	No	Ate lunch together with no masking or social distancing
Registered nurse	Registered nurse	5/11/20	No	Ate lunch together with no masking or social distancing
Instrument Technician	Registered nurse	5/12/20	No	Ate lunch together with no masking or social distancing
Student Nurse	Student Nurse	6/22/20	Yes (cough)	Frequent prolonged unmasked contact during social interactions at work
Ward clerk	Nursing assistant	6/22/20	No	Prolonged contact at nursing station, unreliable use of masks in shared work areas**
Lower-risk exposure to personnel with COVID-19				
Physician	Physician	3/29/20	Yes (cough, nasal congestion)	Worked on same unit, interactions with masking by case but not by source with COVID-19
Nursing assistant	Registered nurse	6/29/20	No	Unclear contact but worked on same ward with unreliable use of masks in shared work areas
Registered nurse	Student nurse	6/20/20	No	Unclear contact but worked on same ward with unreliable use of masks in shared work areas
Nursing assistant	Student nurse	6/20/20	Yes (cough)	Unclear contact but worked on same ward with unreliable use of masks in shared work areas
Registered nurse	Student nurse	6/24/20	Yes (cough)	Unclear contact but worked on same ward with unreliable use of masks in shared work areas
Registered nurse	Registered nurse	6/25/20	No	Unclear contact but worked on same ward with unreliable use of masks in shared work areas
Registered nurse	Nursing assistant	6/25/20	No	Unclear contact but worked on same ward with unreliable use of masks in shared work areas
Registered nurse	Nursing assistant	6/25/20	No	Unclear contact but worked on same ward with unreliable use of masks in shared work areas
Nursing assistant	Student Nurse	6/25/20	No	Unclear contact but worked on same ward with unreliable use of masks in shared work areas

CONCLUSIONS

- In our facility, 25% of personnel with COVID-19 had a higher-risk exposure to an infected patient or co-worker at work and 14% reported a higher-risk exposure in the community
- Improved detection of patients with atypical presentations and efforts to reduce high-risk contacts among personnel may reduce the risk for acquisition of SARS-CoV-2
- Efforts are needed to reduce lapses in compliance with masking in nonpatient care areas among personnel