Clinical and Epidemiological Features of Healthcare Workers Detected with Coronavirus Disease

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BACKGROUND

- Screening for COVID-19 like symptoms, although used to prevent healthcare-associated transmission of SARS-CoV-2, may not identify asymptomatic or pre-symptomatic carriers. We prospectively ascertained SARS-CoV-2 infection amongst healthcare workers during the COVID-19 epidemic at a teaching hospital and evaluated the clinical and epidemiological features.

OBJECTIVES

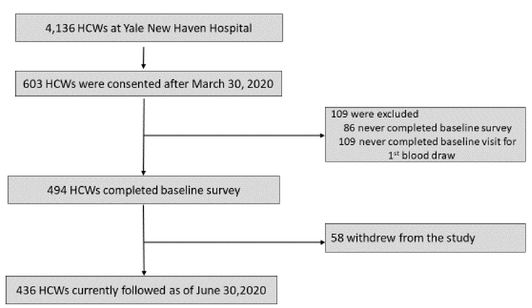
Evaluate prospectively the natural history of COVID-19

- Symptomatic vs asymptomatic infections
- Duration of viral shedding
- Pre-exposure correlates of immunity to infection
- Correlates of immunity to re-infection

METHODS

- We conducted a prospective cohort study in asymptomatic or minimally symptomatic healthcare workers in a 1541-bed academic medical center.
- We recruited healthcare workers (HCWs) who provided direct patient care during the first wave of the pandemic. Information was gathered on demographics, work area in the hospital and a daily web-based questionnaire was sent with a list of symptoms associated with SARS-CoV-2 infection.
- Twice weekly, self-collected nasopharyngeal (NP) swab and saliva were sought and evaluated by RT-PCR for SARS-CoV-2 . If positive RT-PCR result, a telephone survey was conducted to assess symptomatology and severity of illness.

Table 1. Enrollment and Follow up of Healthcare Workers in YNHH



FIGURES

Figure 1. COVID-19 Inpatient Admissions during the first wave of the pandemic

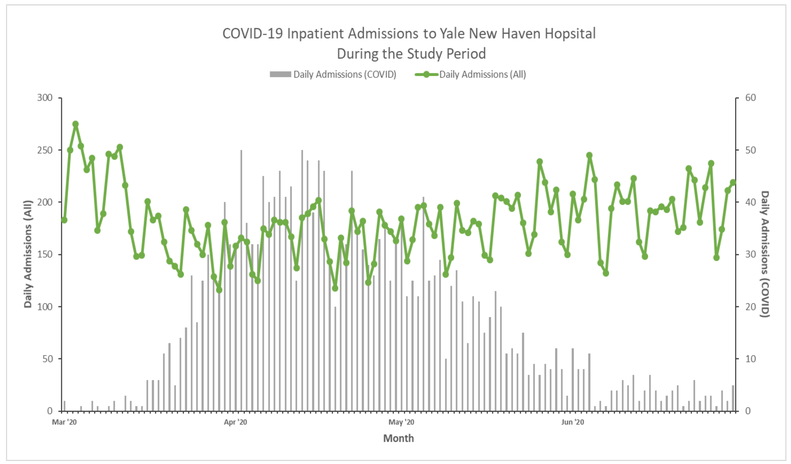
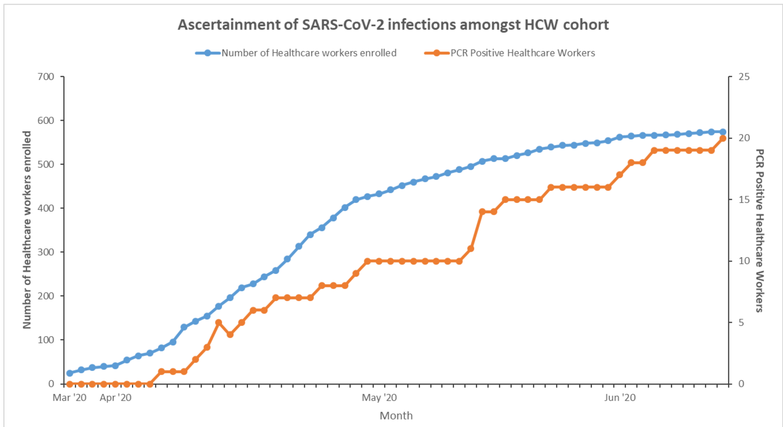


Figure 2. SARS CoV-2 infections within the HCW cohort



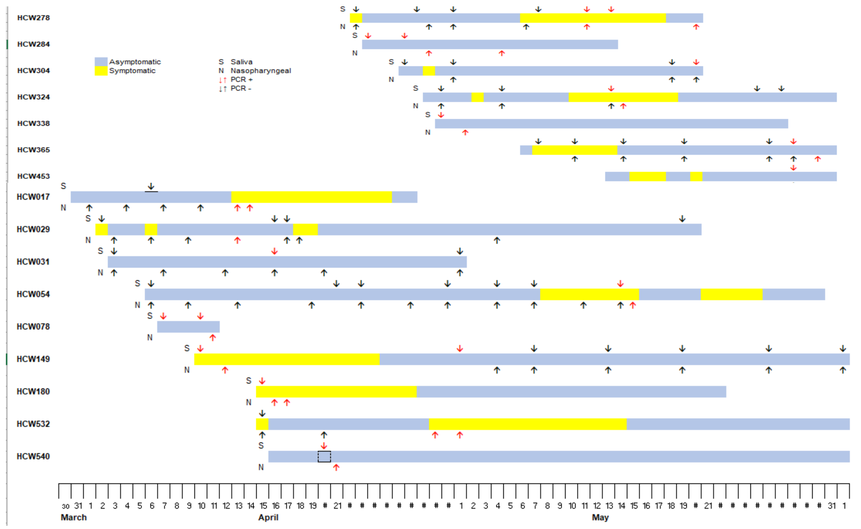
RESULTS

Seventeen healthcare workers were identified as PCR positive during the study period; sixteen were females. Ages ranged from 24-62 years of age and work as registered nurses or personal care assistants.

Fourteen reported having cared for a patient diagnosed with COVID-19 or in a designated COVID-19 unit and adhered to recommended use of personal protective equipment while caring for patients.
Four HCWs remained asymptomatic prior to positive PCR result and in the subsequent 14 days. Five HCWs were minimally symptomatic with either headache or fatigue at time they provided initial saliva or NP sample.

RESULTS

Figure 3. Healthcare Workers with PCR confirmed SARS CoV-2 infection



Information about severity of disease was gathered from daily questionnaire as well as an interview 14 days post PCR positive result. All reported mild disease, managed with supportive care and none required hospitalization.

Only two HCWs reported measured fever, four developed headaches, two lost sense of smell and taste.

Upper respiratory symptoms including rhinorrhea, cough and sore throat were reported by 10 of the 17 HCWs.

CONCLUSIONS

- Active surveillance of HCWs identified asymptomatic and oligosymptomatic HCWs which would not have been identified by temperature screens or self-reported illness.
- This allowed for appropriate isolation and removal from the workplace in order to prevent potential nosocomial transmission.
- The cumulative incidence was 2.8%, similar to that of community transmission.
- Further analysis of our data will aid in understanding rates of seroconversion of asymptomatic and mildly symptomatic HCWs.