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Research Letters

Asymptomatic Spread of COVID-19 in 97 Patients at a Skilled Nursing Facility



minimum of 54 years old and maximum of 102 years old (interquartile range 61–98). Twenty-eight percent of the population was male. Fifty-two patients (53.6%) tested positive for SARS-CoV-2. There were no significant contributions of either age or gender on test result.

Background

There are roughly 16,000 nursing homes in the United States caring for more than 1.5 million individuals. This population is at high risk for morbidity and mortality from SARS-CoV-2,¹ with early reports suggesting a COVID-19 case fatality rate of 15% to 20% for those older than 80.^{1,2} Unfortunately, outbreaks in nursing homes are being reported with increased frequency and with significant associated mortality.^{3–5} The unclear rate of asymptomatic carriers complicates the situation,^{4,6} allowing potential transmission among this high-risk population for substantial time before active infection can be identified.

Methods

We analyzed the results of a single universal testing of an asymptomatic population in a single nursing home. Noting the need for specialized care of COVID-19–positive patients in nursing homes following hospital discharge, our team worked to develop a specialized COVID-19 Center of Excellence.⁷ In anticipation of transferring an asymptomatic population out of our proposed site, we mobilized a team of Emergency Medical Services providers trained in administering nasopharyngeal swabs to test all 97 residents for COVID-19. At the time of testing, there were no known or reported cases of active COVID-19 infection among any of the 97 residents or 147 staff members. Samples were transported to the laboratory for real-time SARS-CoV-2 nucleic acid detection (reverse-transcriptase polymerase chain reaction), which is able to detect SARS-CoV-2 with a clinical sensitivity of 70% to 75%. This analysis was deemed exempt from review by our institutional review board.

Results

A total of 97 residents were tested for COVID-19, representing all residents in a single nursing home. The average age was 83, with a

Discussion

To our knowledge, this represents the largest universal testing of a suspected asymptomatic population at a single site in the United States. Asymptomatic and presymptomatic spread of SARS-CoV-2 has been previously reported,^{4–6} although large-scale testing of asymptomatic populations is not currently common practice. Recent evaluations suggest an alarming rate of asymptomatic and presymptomatic disease prevalence once cases have been identified at a particular site. However, and concerning, in the site evaluated in the current report no suspected cases had been yet reported. Our results suggest SARS-CoV-2 is prevalent in many nursing homes even in the absence of symptomatic individuals.

This nursing home had been closed to visitors and had been practicing physical distancing among residents for 22 days before our evaluation, yet more than 50% of the population tested positive for COVID-19. Several possible explanations exist, including spread from staff members, a known contributor in previous outbreaks,³ and the frequent transfer of patients in and out of the short-term care unit. Further, social distancing among residents proved extremely challenging, particularly on the facility's memory care unit.

Our study has limitations, including the single-site nature of the study and a known and accepted false-positive rate of our test. Further, it is likely that many patients were indeed symptomatic. Many patients suffered from cognitive decline and may have been unable to express symptoms, patients with chronic respiratory conditions may have had symptoms that were not noticed, and mild symptoms may have gone unrecognized. Yet the number of positive cases in this reportedly asymptomatic population is alarming and suggests careful attention must be paid to this population in terms of increased testing, infection control, and advance care planning.

Nursing homes must behave as if all residents and staff are potentially infected once COVID-19 is documented in a community. Until improved options for treatment or vaccines become available, widespread testing among nursing home residents and staff alike should be implemented. Intensive infection control and prevention are essential, and hospitals should implement universal screening of nursing home transfers regardless of symptoms.

Supplementary Data

Supplementary data related to this article can be found online at <https://doi.org/10.1016/j.jamda.2020.05.040>.

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Maintaining Zero Coronavirus Disease 2019 Infection Among Long-Term Care Facility Residents in Hong Kong



To the Editor:

During the novel coronavirus disease 2019 (COVID-19) pandemic, older adults are a particularly vulnerable group with higher mortality.¹ In long-term care facilities (LTCFs), the risk of serious outbreaks is great given a higher prevalence of dementia and potential poor resident compliance with infection control measures such as hand hygiene and wearing of surgical masks.^{2,3} Transmission from infected healthcare workers in LTCFs have led to disastrous outbreaks.² Hong Kong recorded its first confirmed case of COVID-19 on January 23, 2020. Up to the point of writing (May 16, 2020), there has been no LTCF resident (~74,000 in 940 LTCF) infected with COVID-19 in Hong Kong. We believe that the following measures have contributed to this favorable outcome.

Visitor Restrictions

Most LTCFs in Hong Kong have followed the practice of the public hospitals under the Hospital Authority (HA) to restrict

visitors since January 23, 2020. Relatives are only allowed to bring necessities to residents via LTCF staff at the facilities' main entrance.

Early Government and HA Involvement

The Center for Health Protection (CHP) and link nurses of the Community Geriatric Assessment Team (CGAT)⁴ of HA have offered guidance and education to LTCF staff to reinforce hygiene and infection control measures.⁵ The CHP has established guidelines for residents and staff working in LTCFs.

Policies Regarding Staff Working in LTCFs

Staff are required to have daily measurement of body temperature and to wear surgical masks on duty. Hand hygiene and contact precautions are emphasized. Staff should avoid talking during meal-times. Staff with travel history meeting the government's quarantine criteria are not permitted to return to work and are quarantined according to the government's policy. Staff members are arranged to work on the same floor or district (ie, caring for the same group of patients) and no cross-over of duty is allowed.⁵

Policies Regarding Residents

Residents are also required to have daily measurement of body temperature and to wear surgical masks where feasible. If they develop respiratory symptoms or fever, physician assessment will be arranged. New residents and newly discharged residents from hospitals (COVID-19 testing is not compulsory) will be bathed immediately with monitoring of body temperature 2 times per day for 1 week. Other than for medical needs, residents are not allowed to leave LTCF premises. Residents' meal-times are arranged at different time slots and no face-to-face sitting is allowed.⁵

Other Infection Control or Hygiene Measures

The environment in each LTCF is regularly cleaned with household bleach solution. Soap, alcohol hand rub, tissue paper, and rubbish bin are provided in washrooms, kitchens, tea rooms, dining rooms and activity rooms with regular replenishment.⁵

On-site Physician Visits

The HA CGAT services have reduced the frequency of routine physician visits to every 16 weeks in an effort to minimize exposure risk to and from healthcare workers and conserve personal protective equipment. Drug refill are arranged for stable patients. Physicians are provided with face shields, surgical masks, and protective gowns when making on-site visits.

Response to a COVID-Positive Staff Member

A 23-year-old nurse who provided care in 2 LTCFs was confirmed with COVID-19 infection on March 27, 2020. Upon contact tracing, the nurse had provided routine nursing care to around 100 residents on March 24 and March 25, 2020. The nurse had followed strict contact precautions and was wearing a surgical mask while on duty. Recent studies have shown the highest viral load in saliva is during the first week of infection and viral load is similar in symptomatic and presymptomatic patients.^{2,6} The residents were placed under on-site quarantine for 28 days. Daily body temperature and monitoring for respiratory symptoms were performed and reported to the CHP and CGAT link nurses. All staff