

# COVID-19 Action Newsletter

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## The Situation: U.S. Confirmed Cases Exceed 2.4 Million

In the world as of June 26, 2020, 9,643,999 cases of Covid-19 and 490,055 deaths have been confirmed. In the United States, there have been 2,424,054 cases, the most in the world followed in order by Brazil, Russia, India, the United Kingdom, Peru, Chile, Spain, Italy, Iran, Mexico, France, Pakistan, Germany, Turkey, Saudi Arabia, Bangladesh, South Africa, Canada, Qatar and China.<sup>1</sup> Deaths in the U.S. through June 12 have been estimated at 124,468.<sup>2</sup>

From March 10 through June 25, there have been 18,538 confirmed cases of Covid-19 reported from Dallas County with 334 confirmed deaths, over one-third of these from long-term care facilities.<sup>3</sup> Of hospitalized cases in Dallas County, more than two-thirds have been under 65 years of age, and about half have not had any high risk chronic health conditions. After June 1, more than one-half of cases have been in the age group, 18-39 years of age. Diabetes mellitus has been seen in about one-third of all hospitalized patients. More men than women have died. The age-adjusted rates of confirmed Covid-19 cases in non-hospitalized patients have been highest among Hispanics (667.4 per 100,000), Asians (187.4 per 100,000) and Blacks (136.4 per 100,000). These rates have been higher than Whites (43.8 per 100,000). Over 60% of overall Covid-19 cases to date have been Hispanic.<sup>3</sup>

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1. Covid-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) (Updated 6/26/20)
2. Worldometer. Coronavirus update 6/26/20
3. Dallas County Health and Human Services. Acute Communicable Disease Epidemiology Division 6/26/20

### Feature Article

## Covid-19 in Long-Term Care Facilities

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### Impetus

Covid-19 leads to disproportionate morbidity and mortality in older adults with underlying chronic conditions.<sup>1</sup> Octogenarians have the highest incidence of Covid-19 infection and mortality regardless of presence or absence of chronic conditions.<sup>1</sup> In the United States 1.5 million older adults (>65) live in nursing homes (NH) and 1 million in assisted living facilities (ALF). More than 85% of the NH population are older people suffering from frailty and chronic illness.<sup>2</sup> Spread of infections, such as Covid-19, can have a significant impact on this vulnerable older population.

On February 28, 2020, a NH in King County, Washington, reported its first case of Covid-19 infection in a female resident. The country identified 129 more cases including residents (81), staff members (34), and visitors (14), with 29 deaths.<sup>3</sup> The Centers for Disease Control and Prevention (CDC) and local public health officials responded to the outbreak by assisting with testing, contact tracing, and providing guidance regarding quarantine patients. Subsequently, 30 skilled nursing facilities (SNF) and ALF in the county identified at least one confirmed case of Covid-19. It was determined that Covid-19 had spread to these places by staff and patient

transfers between facilities. Infections, including Covid-19, spread rapidly within Long-term care facilities (LTCF). This underscores the importance of instituting measures in advance to identify and exclude potentially infected residents, staff and visitors, and implement appropriate infection prevention and control measures.

From April 15 to June 12, 18 NHs in Dallas County have reported 304 positive Covid-19 cases among residents, 92 among staff, and 58 deaths.<sup>4</sup> LTCF need access to an adequate supply of personal protective equipment (PPE) to care for residents symptomatic with, or suspected of having, Covid-19. PPE not only protects the care staff but also the resident. LTCF need increased availability of testing kits and other lab supplies that are integral to protecting the health and safety of the residents and staff. Finally, LTCF need supplies for symptom management and end-of-life care for residents suffering from severe symptoms due to Covid-19 infection. Without these tools and implementation of strict infection control measures, outbreaks will continue to occur likely resulting in high mortality.

### **Atypical Presentation of Disease**

Older adults may present with atypical manifestations of Covid-19 infections. Frail older adults with multiple chronic conditions may be afebrile and present with delirium, tachypnea, unexplained tachycardia, hypotension or falls. Informal reports from U.S. physicians have indicated that older adults presented with fatigue, malaise, low-grade fever and cough that progressed to respiratory difficulty in the second week of illness. Fever was not present or prominent in many cases.<sup>5</sup> In February 2020, anosmia emerged as a common symptom in the Chinese population affected with Covid-19.

Later, reports from United Kingdom and U.S. showed that almost two-thirds of people with Covid-19 reported loss of smell or taste.<sup>6</sup> Olfactory function normally declines with age. Older people lose the sense of smell and the ability to discriminate smells. More than 75% of people over the age of 80 have some impairment of the olfactory system. Gustatory function is also affected; however, this is primarily due to olfactory impairment. Multiple medical conditions can affect the sense of taste and smell in the older adult including neurological conditions such as Alzheimer's disease, nutritional disorders, endocrine diseases, local pathology such as sinusitis and viral infections.<sup>7</sup> Older people presenting with complaint of loss of taste or smell need to test for underlying conditions, including Covid-19. During the Covid-19 pandemic, older patients with a significant clinical change from baseline, especially those suffering from neurocognitive disorders, need evaluation for Covid-19 infection. (See value of loss of taste and smell for Covid-19 surveillance on social media, C.A.N. vol. 1, No. 5, May 15, 2020)

### **Understanding the Pandemic**

Residents and staff of LTCF have a high risk of infection due to the unique care setting and the vulnerable population. It is crucial that health care professionals understand the ABCDs of the Covid-19 pandemic.<sup>5</sup> ABCDs include increasing the **Awareness** of atypical presentations of disease in the older population, initiating appropriate **Behaviors** quickly to manage infections, and **Containment** to disrupt further spread of the virus. The guidelines emphasize the importance of healthcare leaders, policy makers and government agencies to make **Decisions** that address rapid access and results for testing and treatment as well as costs and societal impacts of this pandemic.

Given the high transmission risk of Covid-19 in this population, LTCFs have taken steps to heighten infection control, cancel group activities, close common dining areas, ban all visitors and evaluate residents at least three times per 24-hour period for a change in condition.<sup>8</sup> Data show that wearing a facemask protects people (both healthcare workers and the public) against Covid-19.<sup>9</sup> However, it does not afford complete protection from infection. Whether a universal mask policy requirement for all staff and residents at a LTCF leads to reduction in infection rate, is still not clear. In addition, implementing such policies on residents can be challenging for patients suffering from neurocognitive disorders, especially those with dementia.

On April 2, 2020, CMS issued enhanced guidelines for LTCF dealing with Covid-19-positive cases. It recommends the use of PPE for all staff providing direct care and for all residents, regardless of their Covid-19 status. A new tool kit by CMS catalogs state level solutions to protect NH residents from Covid-19. States including Texas have developed their own action plans.<sup>10</sup> PPE and testing are cornerstones to preventing large

outbreaks in LTCF. Zoning based on positive cases, strategic planning, training and teamwork can enhance efforts to mitigate the spread at LTCFs. **Table 1** shows a list of Core practices recommended by CDC that should remain in place even when normal activities resume.<sup>11</sup>

**Recommended Core Practices for Nursing Homes**

ALFs are non-medical facilities that provide care for older people with functional and cognitive impairment. Many take care of older people who are NH eligible. They are not federally regulated, nor are they obligated to provide 24/7 nursing. ALFs provide personal services, assistance with activities of daily living, and coordination of healthcare services. Overall transmission of Covid-19 in ALFs seems lower than in LTCFs, likely due to less need for nursing care and superior ability to implement social distancing measures.<sup>12</sup> Caring for frail older adults can be physically and emotionally demanding. Staff recruitment and retention is tough and remains a challenge during the pandemic since positive cases impact staffing.

**Safe Transfers of Covid-19 Patients**

Covid-19 patients who are leaving the hospital or post-acute setting should not be discharged to mainstream NH or ALF unless the LTCF can safely isolate the patient from other residents and has

adequate infection control protocols and PPE for staff and residents. Due to the high risk of significant morbidity and mortality, advance care planning and goals of care discussions are central to providing care to older adults with Covid-19 infection.<sup>5</sup> When transferring Covid-19-positive residents from LTCF to the hospital emergency department, the most important thing to discuss, or be aware of, are the goals of care, patient preferences and advance directives. If symptoms are severe, these residents may transition to end of life care at the LTCF if consistent with goals of care.

**Challenges to the Residents of LTCFs**

There are multiple challenges that are unique to the LTCF population. The isolation measures at these facilities have led to profound loneliness and depression in older adults where residents are isolated in their apartments. This loneliness and isolation is a risk factor for anxiety, depression, malnutrition and worsening cognition.<sup>13</sup> Limited mobility and confinement in their rooms has led to residents spending more time being immobile, leading to development of pressure ulcers. Cancelling of communal meals and social activities during the pandemic has led to diverse behavioral and physical issues. Staff face newer challenges and families are unable to visit their loved ones. Many times when LTCF staff are not able to redirect and calm a resident, family members intervene to assist. The pandemic has halted this interaction potentially leading to increase in behavioral issues in residents with neurocognitive disorders.

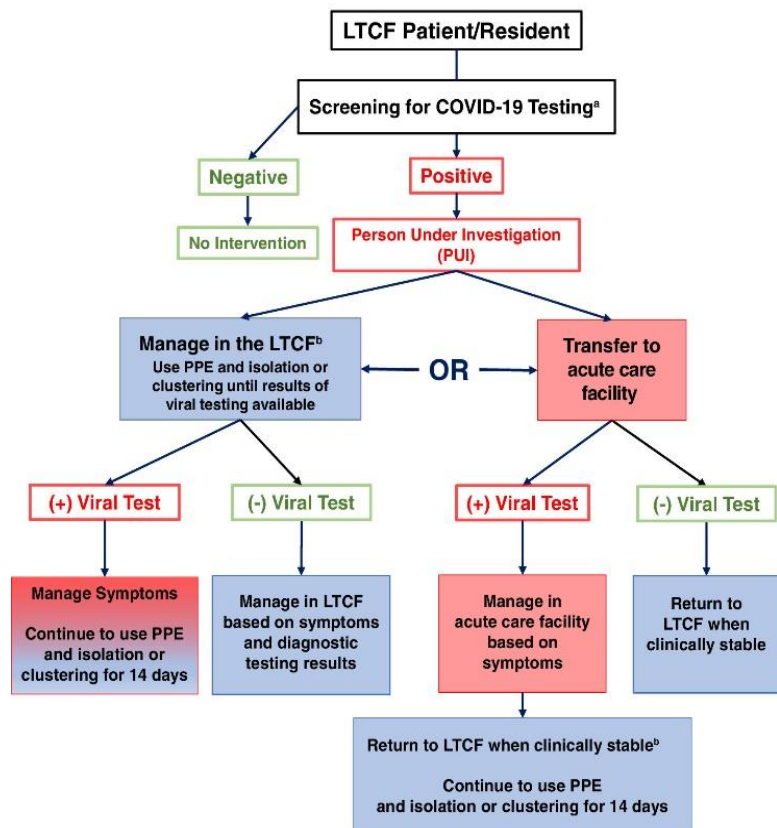
**Table 1: Recommended Core Practices for Nursing Homes**

- Assign one or more individuals with training in infection control to provide on-site management of the IPC program.
- Report covid-19 cases, facility staffing, and supply information to the national healthcare safety network (NHSN) long-term care facility (LTCF) covid-19 module weekly.
- Educate residents, healthcare personnel, and visitors about covid-19, current precautions taken in the facility, and actions they should take to protect themselves.
- Implement source control measures by wearing face masks at all times in the facility
- Have a plan for visitor restrictions.
- Create a plan for testing residents and healthcare personnel for SARS CoV-2.
- Evaluate and manage healthcare personnel.
- Provide supplies necessary to adhere to recommended infection prevention and control practices.
- Identify space in the facility that could be dedicated to monitor and care for residents with Covid-19.
- Create a plan for managing new admissions and readmissions whose covid-19 status is unknown.
- Evaluate and manage residents with symptoms of Covid-19.

Future research can identify whether the Covid-19 pandemic has led to increased use of antipsychotics and other medications in dementia patients with behavioral and psychological disorders. Communal dining and social interactions, especially in patients with dementia improve intake and oral hydration. Lack of this interaction may lead to increased need for assistance with feeding and risk of dehydration, infections and subsequent hospitalization. Amid the pandemic, technology has helped dealing with some of these issues and presented with novel solutions. Tools, such as on-time pressure ulcer evaluation, telehealth, technology for social interaction and staff education, and use of technology to document end of life care have helped in providing care for this vulnerable population.<sup>13</sup> **Figure 1** shows an algorithm for decision management of patients residing at LTCF.<sup>5</sup>

\*CDC recommends that isolation be maintained for at least 10 days after illness onset and at least 3 days after recovery (resolution of fever, improvement of symptoms).

### COVID-19-Decision Management in the LTCF



**Fig 1. Decision Management for Covid-19 in LTCF.**

### Implications

Among older adults, Covid 19 causes serious infections that can lead to hospitalization, need for intensive care, and high probability of death. Infections can spread rapidly in LTCFs. We need to implement mitigation strategies for vulnerable adults residing in LTCF, to slow the transmission of Covid-19. Availability of adequate PPE, testing and infection control can help slow the spread of the virus, especially to this vulnerable population.

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### Epi Corner

## Lessons from Covid-19 on Cruise Ships and an Aircraft Carrier

Important observations have been made and studies performed on Covid-19 on cruise ships and an aircraft carrier. These sites have fixed populations and have been exposed to Sars-CoV-2 for brief, intense periods and have helped elucidate the natural history of the virus, the relative frequency of symptomatic and asymptomatic infections, the case fatality rate (CFR, the percentage who died among symptomatic cases), and infection fatality rate (IFR, the percentage who died among symptomatic and asymptomatic infections).<sup>1</sup>

Two cruise ships, the *Diamond Princess* and the *Ruby Princess*, and an aircraft carrier, the *U.S.S. Theodore Roosevelt*, recently experienced the largest on-board Covid-19 outbreaks that were epidemiologically studied. Approximately 40 more cruise ships have had from 1 to 224 confirmed COVID-19 cases.<sup>2</sup> The average age of cruise ship passengers was 47 years with 19% of passengers being in the 60-69 year age group and 18% being in the 50-59 year group. In contrast, most of the crew of the aircraft carrier's were in the 20-39 age group.<sup>2,3</sup>

The *Diamond Princess*, based in Japan and having has a passenger and crew capacity of 3,711, has usually sailed in the Pacific.<sup>2</sup> Between January 25 and February 25, 2020, 712 persons (19%) tested positive for SARS-CoV-19 (**Figure**). Of these, 331 (47%) were asymptomatic at the time of testing.<sup>4</sup> Of all 712 symptomatic and asymptomatic patients, 9 died, for an IFR of 1.3%, and in the 381 symptomatic patients the CFR was 2.3, which was lower than the previously accepted CFR of 3.8% derived by the WHO.

A total of 96 persons infected with SARS-2 CoV and 32 of their cabin mates who tested negative were subsequently transferred from the *Diamond Princess* to a central hospital in Japan where they were observed over a period until they no longer were infectious (2 negative PCR tests).<sup>5</sup> Of the 96 persons with positive tests on transfer, 11 subsequently developed clinical signs and symptoms of Covid-19 and were considered pre-symptomatic. Eight of 32 cabin mates negative at the time of transfer were subsequently found to be positive but remained asymptomatic. The PCR-positive passengers and cabin mates who were asymptomatic were followed for 3 weeks and all resolved their positive tests within that period, with the majority resolving within 14 days. The period of resolution increased with age of the person studied. The younger the patient, the more rapid the decrease in the viral RNA.

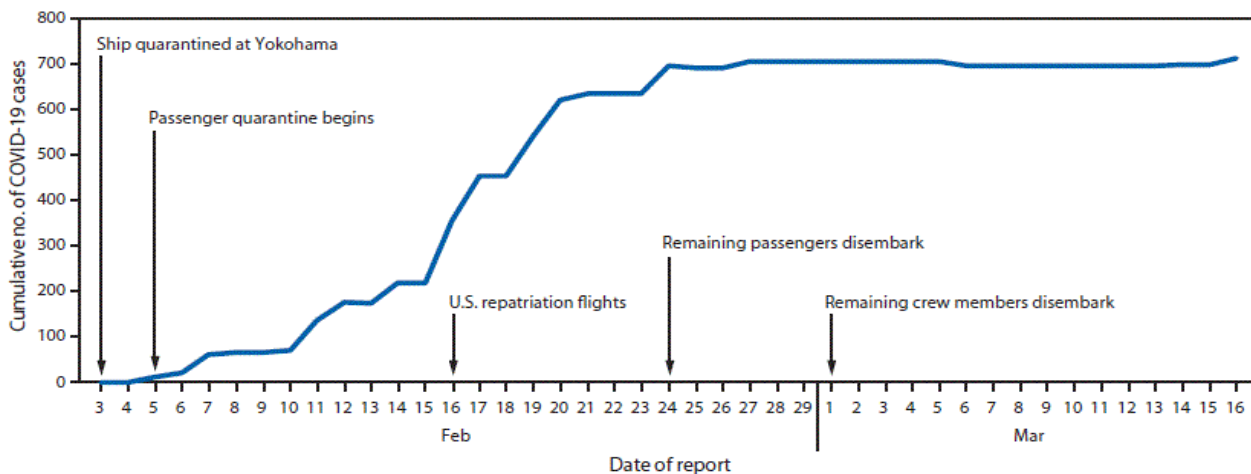
In the Covid-19 experience aboard the *Ruby Princess*, the number of cases was 852 with 22 deaths and a CFR of 2.6%. An IFR was not determined.<sup>2</sup>

During the shipboard COVID-19 epidemic, the *USS Theodore Roosevelt* sailed in the Pacific with a crew of 4,500. At one point in the epidemic, an estimated 1,156 active cases of Covid-19 were detected, including 19%

who were asymptomatic at the time tested. Three of the crew had to be hospitalized and one death occurred in a 41 year old man.

A convenience sample of 382 crew members was studied further by the CDC and the Navy. Loss of the sense of smell (anosmia) or taste (ageusia) was the symptom most predictive of the infection (OR=10.3), followed by fever (OR=2.8), chills (OR=2.7) and myalgia (OR=2.6).

Non-infected personnel were compared to infected persons and were significantly different in terms of the use of face-coverings (56% vs 81%, OR = 0.3), practicing social distancing (55% vs 70%, OR=0.5), and



Cumulative number of confirmed coronavirus disease 2019 (Covid-19) cases by date of detection-Diamond Princess cruiseship, Yokohama, Japan, February 3-March 16, 2020. Source: World Health Organization (WHO) coronavirus diseases situation reports.

avoidance of common areas (54% vs 86%, OR=6).

Among 12 participants with positive Elisa test values >40 days after onset of illness, 8 maintained positive microneutralization test results. The microneutralization test is thought to be the best laboratory measure of immunity since it has been shown to reflect the protection of persons from disease after natural challenge on other viral infections.<sup>3</sup>

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**From the Editors**

The editors thank Drs. Anupama Gangavati, Tara Duval, and Namirah Jamshed for their article on Covid-19 in long-term care facilities.

The aim of this weekly newsletter is to serve as a source of information for the UT Southwestern community which can lead to better understanding and control of a new disease (COVID-19) caused by the pandemic spread of an emerging viral pathogen (SARS-CoV-2). We welcome questions, comments, and suggestions for topics and authors.