

## COVID-19 in the Community: Nursing Homes

### Introduction

Nursing homes provide care to highly vulnerable people at significantly increased risk of severe outcomes from COVID-19. Furthermore, evidence demonstrates greater risk of respiratory virus transmission in long-term care facilities (LTCFs).<sup>1</sup> The New York Times estimates that SARS-CoV-2 infected over 153,000 LTCF residents and staff in approximately 7,700 facilities nationwide. Infections in nursing homes account for 11% of all U.S. cases, and 35% of deaths due to COVID-19.<sup>2</sup>

While DICON does not directly contract with skilled nursing facilities to provide medical education, we recognize that hospitals are increasingly partnering with local LTCFs in order to improve care for these vulnerable patients. This newsletter will cover the epidemiology of COVID-19 infection in LTCFs and provide a framework for

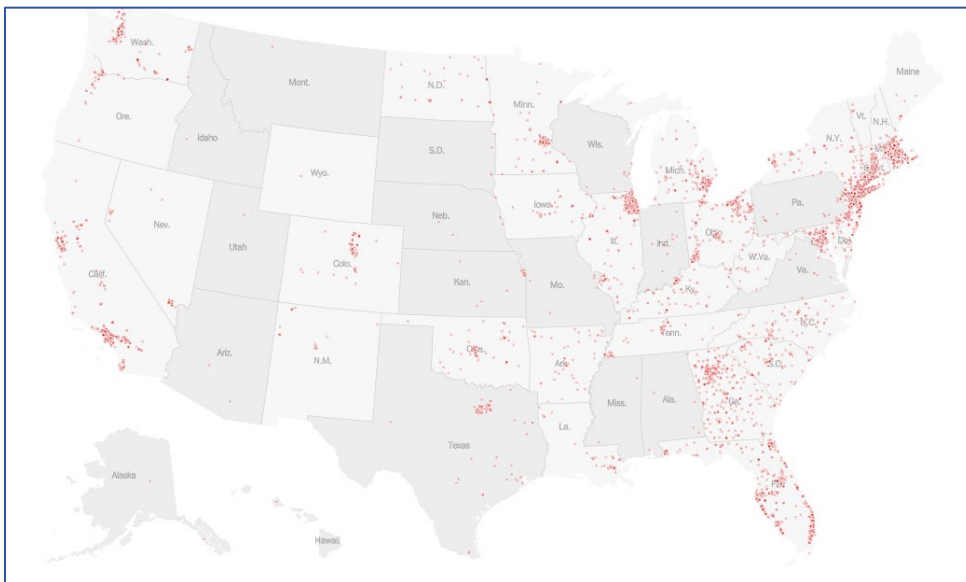
hospitals to collaborate with their local LTCFs. With aid from this newsletter, administrative and infection prevention leadership will be able to:

- Recognize outbreaks in their initial phases
- Provide advice and support when outbreaks enter the surge phase
- Assist resource-limited LTCFs with education, workforce, testing, and PPE, when possible
- Facilitate smooth transitions of care for all patients from LTCFs to hospitals and vice versa.

### Epidemiology

The first documented case of COVID-19 within a LTCF in the United States occurred on February 28<sup>th</sup>, 2020 in King County, Washington. McMichael and colleagues reported results from their subsequent case investigation and contact tracing of the numerous cases that followed this single case.<sup>3</sup> This outbreak revealed important lessons and consequences that remain highly relevant when dealing with similar outbreaks in LTCFs (which are occurring with a distressingly high frequency).

The index case in the above outbreak was a 73-year old resident who developed unexplained fever and hypoxia on February 19<sup>th</sup>. She required transfer to a local hospital on February 24<sup>th</sup>. Her condition deteriorated, and on February 27<sup>th</sup> her physicians ordered COVID-19 testing. At the time of her positive result on February 28<sup>th</sup> (nine days after the onset of her symptoms), a total of 45 additional residents and staff at her LTCF demonstrated symptoms of a respiratory illness. Within the next 10 days, an astounding 167 people connected to the LTCF had positive



**Figure 1.** Each red dot represents a LTCF with at least one reported case of COVID-19. States shaded in dark grey provide no facility data. Source: <https://www.nytimes.com/interactive/2020/05/09/us/coronavirus-cases-nursing-homes-us.html>

PCR tests for COVID-19. The case fatality rate for LTCF residents in this outbreak was 33.7%; 6.2% among visitors, and 0.0% among staff. Subsequent investigations revealed outbreaks in 30 LTCFs in the King County area. Three of these outbreaks were directly linked to the initially affected LTCF through shared patients or employees.

The same authors performed a two-week, serial point-prevalence survey at a second LTCF in King County after a single resident was diagnosed with COVID-19 infection on March 3<sup>rd</sup>, 2020.<sup>4</sup> Surveyors performed PCR testing on LTCF residents on March 13<sup>th</sup>, and again one week later. Forty-eight of the 76 participating residents ultimately tested positive for SARS-CoV-2. Fifty-six percent of infected patients were asymptomatic at time of first positive test. The doubling time of positive cases within the LTCF was estimated to be 3.4 days. In contrast, the doubling time for non-LTCF patients in King County who contracted COVID-19 was 5.5 days.

Outbreaks in LTCFs can overwhelm local hospitals. In the two outbreaks described above, 168 out of 207 residents contracted COVID-19. Sixty-six patients required hospital admission, and ultimately 49 LTCF residents died. COVID-19 outbreaks in LTCFs in other locations resulted in similar consequences. For example, LTCF residents accounted for over a third of all confirmed infections in Durham County, NC (302/886) as of May 11.

## Working with LTCFs to Mitigate Disease

The Joint Commission focused most of their regulatory emphasis on improving transitions of care between acute and post-acute facilities prior to the onset of the COVID-19 pandemic. It is now clear that cooperation and coordination of resources, such as infection control training and protocols between local hospitals and LTCFs, is now critically important.

A great example of such coordination and cooperation is a program developed by the University of Washington Medicine Post-Acute Care (UWM PAC) network— a consortium of the University of Washington Medical Center and 16 local LTCFs. The UWM PAC network

devised a COVID-19 response plan for LTCFs facing the problems described earlier in this newsletter.<sup>5</sup> This response plan includes three sequential phases.

In the *initial* phase, when there are no known cases of COVID-19, LTCFs and their referral hospitals should establish methods and protocols to improve communication, review and update infection control practices and establishing plans for diagnostic testing for SARS-CoV-2.

When there are cases of COVID-19 infections have been documented in an LTCF, the *delayed* phase begins. Efforts in this phase should focus on decreasing transmission. The UWM model recommends that IC staff from the LTCF's main referral hospital(s) provide ongoing onsite education, observation, and feedback of infection control practices and testing algorithms in their referral LTCFs.

When the number of suspected and confirmed cases of COVID-19 exceeds the ability of usual LTCF staff to care for all residents the *surge* phase has begun. The UWM model then recommends that, a "drop team" composed of volunteer physicians and nursing staff recruited from the hospital provide supplemental patient care assistance in the LTCF.

This model was recently deployed by the Durham Veterans Affairs Health Care System to successfully control an outbreak of COVID-19 at a NC State Veterans Home by deploying a volunteer "drop team" similar to that utilized by the UWM health system in the outbreaks previously described.

Telemedicine agreements between their local hospitals, clinics, and LTCFs can directly lead to improved delivery of patient care in LTCFs by minimizing infection risk to both patients and staff.<sup>5,6</sup> Medicare currently provides reimbursement for telemedicine services via phone and videos visits. HIPAA regulations restricting the use of telemedicine were previously barriers to such programs but these regulations have been temporarily waived (and are likely to be permanently waived in the future).

Hospitals without resources to devote to “drop teams” and telemedicine services should encourage their local LTCFs ask their local and state public health officials to provide assistance and support. A few states have deployed their National Guard to provide aid, and other states have formed workforces of volunteer providers to assist LTCFs deal with outbreaks of COVID-19. The Centers for Medicare and Medicaid Services (CMS) publishes an online toolkit of available resources classified by state (<https://www.cms.gov/files/document/covid-toolkit-states-mitigate-covid-19-nursing-homes.pdf>).

### Preparing for Post-acute Care

Acute-care hospitals must also develop collaborative plans and protocols to provide care for both COVID and non-COVID patients requiring additional rehabilitation in LTCFs after their hospital discharge. Controversy exists regarding the need for testing patients prior to discharge to rehabilitation. The authors of a recent editorial in JAMA recommended PCR testing of all patients prior to their transfer to LTCF<sup>7</sup>. However, the CDC recommends AGAINST testing *asymptomatic* patients at the time of their transfer. Their current guidelines state “*decisions about [hospital] discharge...should be based on...clinical status and the ability of the accepting facility to meet...care needs and adhere to recommended infection prevention and control practices.*”<sup>8</sup>

We recognize that transmission of SARS-CoV-2 by asymptomatic hospitalized patients who are transferred to a LTACs is a realistic possibility and a definite concern for many LTCFs. Indeed, transmission of coronavirus infections by asymptomatic (or pre-symptomatic) individuals clearly has occurred in numerous outbreaks of COVID-19 in LTCFs.<sup>4</sup> Eighty percent of surveyed DICON hospitals report that their local LTCFs require one or two negative PCR tests before transfer of asymptomatic to their facility (Table 1).

We recommend that each of our network hospitals establish consensus guidelines to inform discharge testing with each of their local LTACs. Establishing such protocols in advance will improve patient care and patient flow and prevent delays in transfer.

Answer	%	Count
Yes, one test	36.96%	17
Yes, two tests	43.48%	20
No	8.70%	4
Unknown	10.87%	5
Total	100%	46

**Table 1.** Responses to a survey of infection preventionists in DICON-affiliated hospitals to the question: Is this facility testing or required to test asymptomatic patients before transfer to long term care or skilled nursing facilities?

### Key Points

- Patients in LTCF have a high risk of acquiring COVID-19 and experiencing an adverse outcome if they become infected.
- SARS-CoV-2 can rapidly spread through LTCFs, resulting in outbreaks which overwhelm both the local LTCF and hospital.
- We recommend that our affiliated community hospitals utilize the UWM framework we discuss above to create contingency plans with their local LTCFs to prevent potential outbreaks, to mitigate those that occur, and to improve the care of all patients in both facilities.
- We encourage all of our affiliated hospitals to develop telemedicine programs to assist their local LTCFs in providing optimal care during the COVID-19 pandemic.
- We recommend that the all of our affiliated hospitals formally collaborate with their local LTCFs to create consensus protocols to inform discharge testing of asymptomatic patients to provide timely and seamless transfer of care between the two facilities.

### References

1. Lansbury LE, Brown CS, Nguyen-Van-Tam JS. Influenza in long-term care facilities. *Influenza Other Respir Viruses*. 2017;11(5):356-366.
2. One-Third of All U.S. Coronavirus Deaths Are Nursing Home Residents or Workers. <https://www.nytimes.com/interactive/2020/05/09/us/coronavirus-cases-nursing-homes-us.html>. Accessed May 18, 2020.

3. McMichael TM, Currie DW, Clark S, et al. Epidemiology of Covid-19 in a Long-Term Care Facility in King County, Washington. *N Engl J Med*. 2020.
4. Arons MM, Hatfield KM, Reddy SC, et al. Presymptomatic SARS-CoV-2 Infections and Transmission in a Skilled Nursing Facility. *N Engl J Med*. 2020.
5. Kim G, Wang M, Pan H, et al. A Health System Response to COVID-19 in Long Term Care and Post-Acute Care: A Three-Phase Approach. *J Am Geriatr Soc*. 2020.
6. Tumlinson A, Altman W, Glaudemans J, Gleckman H, Grabowski DC. Post-Acute Care Preparedness in a COVID-19 World. *J Am Geriatr Soc*. 2020.
7. Grabowski DC, Joynt Maddox KE. Postacute Care Preparedness for COVID-19: Thinking Ahead. *JAMA*. 2020.
8. Healthcare Infection Prevention and Control FAQs for COVID-19. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-faq.html>. Accessed May 18, 2020.