

COVID 19 in Nursing homes

Dheeraj Mahajan^{1*}, Ammu Thampi Susheela²

¹Chicago Internal Medicine Practice and Research (CIMPAR, SC), 101 Madison St, Suite 300, Oak Park, IL, United States

²Loyola-MacNeal Hospital, 3249 S Oak Park Ave, Berwyn, IL, United States

*Author for correspondence:
Email: dm@cimpar.com

Received date: July 13, 2020
Accepted date: October 05, 2020

Copyright: © 2021 Mahajan D, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Mahajan D, Susheela AT. COVID 19 in Nursing homes. Am J Aging Sci Res 2021; 2(1): 4-8.

Abstract

COVID-19 pandemic is a global threat that is having devastating consequences in congregate settings such as nursing homes and assisted facilities around the world. Several measures have been adapted by the nursing home through the guidance of CMS for protecting the most vulnerable population. This article reviews the measures that has been implemented in the nursing home across the US that has been shown to reinforce the preventive strategies to protect and reduce the morbidity and mortality of the elderly and the frail.

Keywords: COVID-19, Nursing homes, Assisted living facilities, Goals of care, Mental wellbeing

Introduction

One of the coronavirus' distinguishing characteristics is the speed with which it can kill, particularly older people with existing health conditions. Immunosenescence is defined as changes with immune system associated with ageing whereby the system progressively deteriorates the ability to respond to infections and develop immunity after vaccinations. Elderly people are also more prone to present with atypical presentations of COVID-19 such as delirium, falls, and functional decline rather than fever or respiratory symptoms [1]. There is high case fatality rate in elderly over the age of 80 with preliminary data showing it at 15% or greater. Within US, they have contributed to more than 1/3rd of death among 80,000 death in May 2020 [2].

Nursing homes

Given their congregate nature and residents served (e.g., older adults often with underlying chronic medical conditions), nursing home populations are at the highest risk of being affected by COVID-19. Nursing home has become the ground zero of the epidemic in USA. In 2017, there were approximately 1.3 million residents receiving care across 15,483 nursing facilities in the US [3]. There have already been reports of large numbers of cases of COVID-19 spreading quickly through nursing homes, such as the Life Care Center in Kirkland, Washington. A study reported that facilities with higher percentages of Afro-American population have higher COVID-19 cases that speaks about the health care disparities in the nursing homes [4]. Department of Veterans Affairs on March 10 suspended most new admissions and barring outsiders from all its 134 nursing homes and 24 spinal cord injury centers.

The spread of COVID-19 in a nursing home can amplify or seed further spread to other facilities when patients are transferred and when staff and visitors come and go. Nursing homes are at a higher risk for infection as the virus can be transmitted to the by asymptomatic carriers, nursing homes cannot isolate residents for months, nursing homes staff has to deal with multiple residents, the shortage of PPE, false negative test of swab about 37%, and higher case fatality of up to 20% from nursing home. It is estimated that unless aggressive measures are taken, up to 20% of nursing home residents will die and another 20% will have functional impairment.

Assisted living facilities

Assisted living communities are committed to providing a home-like environment for their residents, many of whom are high functioning, mostly independent individuals. In addition, assisted living settings vary in size, scope of care, and policies. There are nearly 29,000 assisted living

communities across the US caring for more than 800,000 residents. Unlike nursing homes, care in assisted living communities is largely paid out of pocket. Although states regulate these residential centers, the degree of regulatory stringency and requirements around staffing and infection control vary from state to state. Because they are not responsible for medical care, assisted living communities might not be equipped with medical or protective equipment like face masks, hoods, and full body suits. In certain assisted living communities, residents can enter and exit the building freely and family members may have unlimited access to the community to visit at any time. Many assisted living communities have multiple entrances without any receptionist or a receptionist at limited times, which may make it challenging to monitor entry at all entrances and at certain times of day [5]. About 16 percent of all residents in nursing facilities across the US received respiratory treatment in 2017, which includes using respirators/ventilators, oxygen, inhalation therapy, and other treatment. Given the implications of this virus on respiratory systems, these residents could be at higher risk of severe outcomes if they were to become infected. In states such as Colorado and Utah, over 30% of residents in nursing facilities are receiving respiratory treatment.

Financial crisis

COVID-19 has also exposed long standing issues of nursing home care. Since nursing home takes care of short term Medicare covering patients which have more generous financial return as well as Medicaid covering long term patients, fewer nursing homes are admitting short term medical beneficiaries especially the ones recovering from COVID-19 and are medically stable for post-acute rehabilitative care since they are not able to take care of them safely. Due to the decreased Medicare revenue, some nursing homes are facing bankruptcy. Nursing homes have little cushion to respond to such national emergencies [6].

Goals of care

Goals of care conversations might be essential to opt for hospice style management based upon the survival odds hospitalization and ventilatory support. It might be essential to have this conversation well before since the surrogate decision makers may not be available in emergency at nursing homes and due to an of visits. A religious counselor or a social worker presence virtual or physical can help the process.

To take care of seriously ill patients with sudden respiratory failure, stocking up on oxygen concentrations, tanks, tubing, and masks. Morphine or other opioid analogs for air hunger needs to be stored for emergency conditions.

For those who died from the disease in the nursing homes, prompt removal requires coordination with coroners, funeral homes, crematoria, and management of getting death certificate, and managing grieving family.

Testing

A serological test for from COVID that is being developed would help to identify staffs who are immune to the disease for better delivery healthcare. Active engagement in the disaster planning process with representatives from nursing home would also help to update the planning and implementation of controlling process.

Mandatory systemic testing of all residents and health care workers of the nursing home periodically even if people are symptomatic has been adopted by most nursing homes given the magnitude of effect of COVID-19 on nursing homes. These blanket testing given their high false negative rates does not completely negate the risk and spread of infection.

Strike team

Abundance of caution and establishing strike team consisting of nurse, epidemiologist, infection control specialist, and a representative from the agency [7]. Research on family involvement in long-term care has shown that family visitation can have potentially positive effects on cognitive and behavioral health diagnoses. Thus, visitor restrictions in nursing facilities, which are currently being implemented to lower the risk of exposure among residents who would be vulnerable to illness if infected, may also have negative impacts on residents' mental health and increase the incidence of depressive symptoms. Deficiencies related to infection control are the most common deficiency that nursing facilities report, followed by food sanitation (36%) and accident environment (34%).

Preventive measures

According to CDC, visitors and health care personnel who are ill are the most likely source of introduction of COVID-19 into nursing homes, necessitating today's change in guidance to restrict visitors and personnel. If infected with SARS-CoV-2, the virus that causes COVID-19, residents are at increased risk of serious illness. CDC recommends nursing homes and long term care facilities to assess and improve the measures for COVID-19 preparedness which include rapid identification and management of ill residents, visitors and consultants, supplied and resources, sick leave policies and occupational health considerations, education and training, surge capacity for staffing, equipment, supplies, and postmortem care. A checklist has been produced by the CDC for helping to create a strategy. The measures include restrict all visitations except for compassionate visit for end of life situations, restricting all volunteers and on essential healthcare personnel, cancelling group activities, and communal dining, active screenings of residents for fever and respiratory symptoms. Sending letters to families, posting signs about restrictions in visiting are recommended. Introducing alternative methods of visitation (such as Skype and FaceTime) are encouraged. Visitors who are permitted to enter the building for compassionate end of life visit, will be required to frequently clean their hands, limit their visit to a designated area within the building, and wear a facemask

Self-reporting

Asking residents to report feverishness, or respiratory symptoms, and actively monitoring for such symptoms are recommended. It is not recommended to separate known or suspected COVID-19 residents. In instances of transporting resident to higher care facility, transporting personnel and receiving facility must be notified and asked to take protective measures. The resident must wear a mask while transporting. Residents must be encouraged to remain in the room. If they leave their room, residents should wear a facemask, perform hand hygiene, limit their movement in the facility, and perform social distancing (stay at least 6 feet away from others). IDPH recommends obtaining full set of vitals AND pulse oximetry every 8 hours (Q8 hours) [8].

Visitations

On March 2020, CMS announced its most aggressive and decisive recommendations with respect to nursing home safety in the face of the spread of COVID-19. CMS also encourages nursing homes to keep residents' loved ones informed about their care. This could include assigning a staff member as a primary contact for families to facilitate inbound communications, as well as regular outbound communications. Nursing homes should put alcohol-based hand sanitizer with 60-95 percent alcohol in every resident room – both inside and outside the room if possible – and in every common area. Additionally, nursing homes should ensure sinks are well-stocked with soap and paper towels for hand washing. They should make tissues and facemasks available for people who are coughing and make necessary PPE available in areas where resident care is provided. Finally, they should ensure hospital grade disinfectants are available to allow for frequent cleaning of high-touch surfaces and shared resident equipment [9]. Close more than one entry point in accordance with life safety regulations. Consider having one central entry location (e.g., main entrance) [10].

Monitoring

When COVID-19 enters your facility, to minimize the spread, isolate, minimize contact with other residents, increase transmission-based precautions and increase monitoring of residents and staff. IDPH recommends visits every 4 hours for such individuals. The infected persons should stay in their own room or share with another infected person. Non infected residents should remain in their room as much as possible and enforce social distancing. Bundling trips to the resident's room to complete multiple tasks and assigning same staff to same patients every day. Infected persons likely will fall into three categories: those with respiratory symptoms and fever that can be managed with traditional supportive care and will get better, those with worse respiratory symptoms or exacerbation of their underlying medical conditions that will require more nurses and physicians to manage, and those who progress to ARDS or severe respiratory compromise who despite aggressive ICU level care have had an extremely high mortality rate and will require compassionate care. Residents with confirmed COVID-19 or displaying respiratory symptoms should receive all services in room with door closed (meals, physical and occupational therapy, activities, and personal hygiene, etc.). Disinfect frequently touch surfaces every two hours or as frequently as possible with EPA registered and approved product (List N products).

Bedside ultrasonography for detecting the diagnostic process of COVID-19 pneumonia which can present as indented or broken pleural line, subpleural consolidations, and white lung pattern has been studied and is a feasible option for detection [11].

Ventilation

Lynch et al. reported five steps to improve airflow in nursing homes to reduce the spread of infection including estimating the total room volume, ventilation and diffusion pressure, installing supplemental exhaust ventilation through dedicated exhaust portal, increased efficiency of filtration, keeping doors to hallways closed and following CDC precaution guidelines for healthcare workers [12].

Engaging residents while social distancing include engaging with residents at every interaction, asking questions about their day,

how they are feeling, and what they have been doing, ensuring that residents are staying in touch with family and friends by helping them set up video chat, phone calls, or writing cards and letters. Use of technology such as online museums, classes, metropolitan opera, online streaming of religious faith, and online games. Providing residents with reading materials, kindle, or intercom book reading would be helpful. Engaging them in arts and crafts such as puzzles, sudoku, coloring books, knitting, sewing, cross stitch, needle point, jewelry making, macramé, quilting, painting, scrapbooking. Providing them with exercises Tai chi, Pilates, yoga, dancing, music, board games, meditation, movies, bingo over intercom, tea party for one, nonsocial ice-cream, trivia questions, baby pictures, choosing country or state to learn about and treating with a bird watching, planting, journaling, and practicing gratitude.

Hospital nursing home partnership

Hospital and nursing home can develop partnership in combatting against COVID-19 by engaging, building trust and relationships, scanning the environment, team building and immediate response, early phase response, stabilization, and transition period [1].

Mental wellbeing

COVID-19 restrictions raise several mental health issues especially in elderly population who are confined to their house and nursing homes. Several innovative methods are suggested to reduce the isolation of elderly in nursing homes and the loneliness including telephone outreach by student volunteers, and window visits by family members [13].

Health of healthcare workers

The healthcare personnel must wear facemask while in facility and have PPE including gowns, goggles, gloves, n95 respirator regardless of presence of symptoms. For health care workers exposure can be termed under three different categories of low risk and medium risk. HCW not wearing gloves with direct contact with secretions/excretions of a patient and if the HCW failed to hand hygiene is considered as medium risk category and active monitoring for 14 day is required. If the HCW wearing mask or respirator with prolonged contact with a patient wearing mask is low risk.

For health care personnel suspected with infection are asked to stay at home for at least 7 days and may return to work based on test based and non-test-based strategy. Non test based strategy include resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (e.g., cough, shortness of breath), at least 3 days (72 hours) have passed since recovery defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (e.g., cough, shortness of breath); and, at least 7 days have passed since symptoms first appeared.

Test based strategy includes resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (e.g., cough, shortness of breath) and negative results of an FDA Emergency Use Authorized molecular assay for COVID-19 from at least two consecutive nasopharyngeal swab specimens collected ≥ 24 hours apart (total of two negative specimens) [1].

After returning to work HCP should wear a facemask at all times while in the healthcare facility until all symptoms are completely

resolved or until 14 days after illness onset, whichever is longer, Be restricted from contact with severely immunocompromised patients (e.g., transplant, hematology-oncology) until 14 days after illness onset, adhere to hand hygiene, respiratory hygiene, and cough etiquette in CDC's interim infection control guidance (e.g., cover nose and mouth when coughing or sneezing, dispose of tissues in waste receptacles) and self-monitor for symptoms, and seek re-evaluation from occupational health if respiratory symptoms recur or worsen. Residents who are not infected can be considered for communal dining with restrictions such as maintaining 6 feet distances [14].

It is important to take extra care in the wellbeing of the healthcare worker as most of the nursing home workers are over worked and nursing homes are facing shortage of staff [15].

Other measures

In its efforts to control and prevent the spread of Coronavirus Disease 2019 (COVID-19), the Centers for Medicare & Medicaid Services (CMS) released revised guidance on March 9, 2020 to advise healthcare facilities [16]. Most likely, dementia does not increase risk for COVID-19, the respiratory illness caused by the new coronavirus, just like dementia does not increase risk for flu. However, dementia-related behaviors, increased age and common health conditions that often accompany dementia may increase risk of contraction of the disease. Screening questions include symptom review, travel review, and an exposure review. It is important to balance the psychological and emotional well-being of our residents against their heightened risk for complications and mortality from this virus. The new rules include deploying 8,200 surveyors to 15,000 nursing homes across the country to ensure that the facilities are following infection control protocols [17]. Medicaid Services (CMS) is suspending non-emergency inspections of nursing homes so inspectors can focus on the spread of the coronavirus (COVID-19) [18]. Buildings must implement a single point of entry, and facilities must set up visitor logs if they have not done so already; everyone entering must sign in. Staff members and vendors must have their temperatures taken and health assessed upon entering buildings [19]. The Kansas City Missouri Fire Department (KCFD) is now taking an enhanced, full-protection approach in calls where EMS crews are dispatched [20]. COVID-19 in a nursing facility will quickly spread to the acute care hospitals that treat nursing home residents intermittently. Therefore, communication is essential, with patient charts clearly marked and advance notice provided when any resident who has been exposed to COVID-19 needs to be hospitalized for any reason. Most nursing homes do not have negative pressure rooms and are relatively unprepared to admit patients recovering from COVID-19. Do not accept a patient without consulting with your local public health department and reviewing resources first. CMS urges nursing homes to have back up physicians [21].

Minority of patients could go home to friends or family, and those that can transfer to a private home should be encouraged to do so. If even 10% of residents return to private homes, this would save lives. Transferring patients to private homes would also free-up bed space as the hospitals overflow. a group of frail, older adults who are in close quarters with each other, with many of them being cared for by the same individual. COVID-19 in the context of long-term-care homes is always concerning. Adopt a resident program by oak park and EAMC laier where staffers spent time with resident and provide activities like planting flowers, sacks, listening to music,

playing dominos, letters from school students reading [22]. The Maine Center for Disease Control is now prioritizing COVID-19 test results for residents and employees in long-term care facilities and nursing homes [23].

Conclusions

In summary, huge, and strict measures are needed to be implemented for taking care of elderly in the covid 19 era in the institutional setting. Measures recommended by CMS and CDC for residents and HCW should be implemented and strictly monitored for flattening the curve and reducing the morbidity and mortality in nursing homes.

References

1. Stall NM, Farquharson C, Fan-Lun C, Wiesenfeld L, Loftus CA, Kain D, et al. A Hospital Partnership with a Nursing Home Experiencing a COVID-19 Outbreak: Description of a Multi-Phase Emergency Response in Toronto, Canada. *Journal of the American Geriatrics Society*. 2020 May 22.
2. Behrens LL, Naylor MD. "We are Alone in This Battle": A Framework for a Coordinated Response to COVID-19 in Nursing Homes. *Journal of Aging & Social Policy*. 2020 Jun 5:1-7.
3. Chidambaram P. Data Note: How might Coronavirus Affect Residents in Nursing Facilities? Kaiser Family Foundation. 2020 Mar 13. Available from: <https://www.kff.org/medicaid/issue-brief/data-note-how-might-coronavirus-affect-residents-in-nursing-facilities/>
4. Abrams HR, Loomer L, Gandhi A, Grabowski DC. Characteristics of US Nursing Homes with COVID-19 Cases. *Journal of the American Geriatrics Society*. 2020 Jun 2.
5. Francisco T, Davis K. 46 cases of COVID-19 confirmed at DuPage County nursing home. WGN-TV. 2020 Mar 19. Available from: <https://wgntv.com/news/42-cases-of-covid-19-confirmed-at-dupage-county-nursing-home/>
6. Werner RM, Hoffman AK, Coe NB. Long-Term Care Policy after Covid-19—Solving the Nursing Home Crisis. *New England Journal of Medicine*. 2020 May 27.
7. 2 COVID-19 cases reported in Alabama nursing homes. FOX10 News. 2020 Mar 19. Available from: https://www.fox10tv.com/news/coronavirus/covid--cases-reported-in-alabama-nursing-homes/article_7f3cbadc-69fc-11ea-b316-b737eab77ae1.html
8. Centers for Disease Control and Prevention. Preparing for COVID-19: long-term care facilities, nursing homes.
9. Centers for Medicare & Medicaid Services. CMS Announces New Measures to Protect Nursing Home Residents from COVID-19. CMS. Gov. 2020 Mar 13.
10. Taking Reasonable Efforts to Prevent COVID-19 From Entering Your Skilled Nursing Center. American Health Care Association. 2020 Mar 09.
11. Nouvenne A, Ticinesi A, Parise A, Prati B, Esposito M, Cocchi V, et al. Point-of-care chest ultrasonography as a diagnostic resource for COVID-19 outbreak in nursing homes. *Journal of the American Medical Directors Association*. 2020 May 25.
12. Lynch RM, Goring R. Practical Steps to Improve Air Flow in Long-Term Care Resident Rooms to Reduce COVID-19 Infection Risk. *Journal of the American Medical Directors Association*. 2020 Apr 10.
13. van Dyck LI, Wilkins KM, Ouellet J, Ouellet GM, Conroy ML. Combating Heightened Social Isolation of Nursing Home Elders:

- The Telephone Outreach in the COVID-19 Outbreak Program. *The American Journal of Geriatric Psychiatry*. 2020 Jun 5.
14. COVID-19 - Long Term Care Facilities Guidance. Illinois Department of Public Health. 2020. Available from: <http://www.dph.illinois.gov/topics-services/diseases-and-conditions/diseases-a-z-list/coronavirus/long-term-care-guidance>
 15. Van Houtven CH, DePasquale N, Coe NB. Essential long-term care workers commonly hold second jobs and double-or triple-duty caregiving roles. *Journal of the American Geriatrics Society*. 2020 Apr 27.
 16. Summary of CMS Guidance on COVID-19 for Nursing Homes. Morris, Manning, & Martin, LLP. 2020 Mar 11. Available from: <https://www.mmmlaw.com/media/summary-of-cms-guidance-on-covid-19-for-nursing-homes/>
 17. Strickler L, Fichtel C. Coronavirus task force rolls out guidelines for nursing homes. *NBC news*. 2020 Mar 05. Available from: <https://www.nbcnews.com/health/health-news/coronavirus-guidelines-nursing-homes-rolled-out-n1150156>
 18. Dobson A. Nursing Home Inspections Suspended in Wake of COVID-19. *The National Law Review*. 2020 Mar 10. Available from: <https://www.natlawreview.com/article/cms-suspends-nursing-home-inspections-offers-guidance-wake-coronavirus>
 19. Bowers LA. States impose coronavirus rules for long-term care; AMDA, ACHCA conferences affected by COVID-19. *McKnight's Senior Living*. 2020 Mar 12. Available from: <https://www.mcknightsseniorliving.com/home/news/states-impose-coronavirus-rules-for-long-term-care-amda-achca-conferences-affected-by-covid-19/>
 20. Mashek K. Nursing homes, paramedics taking extra steps to mitigate spread of COVID-19. *FOX 4 Kansas City*. 2020 Mar 27]. Available from: <https://fox4kc.com/news/health/nursing-homes-paramedics-taking-extra-steps-to-mitigate-spread-of-covid-19/>
 21. Lynn J. A Pragmatist's Advice for Nursing Homes. *MediCaring.org*. 2020 Mar 28. Available from: <https://medicaring.org/2020/03/28/pragmatists-advice/>
 22. Estremera C. Nursing homes adjust to COVID-19. *Valley Times-News*. 2020 Mar 26. Available from: <https://www.valleytimes-news.com/2020/03/nursing-homes-adjust-to-covid-19/>
 23. Mistler S. In Departure From Fed. Guidelines, Maine CDC Makes COVID-19 Testing At Nursing Homes Higher Priority. *Maine Public*. 2020 Mar 26. Available from: <https://www.mainepublic.org/post/departure-fed-guidelines-maine-cdc-makes-covid-19-testing-nursing-homes-higher-priority>