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PATIENT SAFETY NETWORK

Coronavirus Disease 2019 (COVID-19) and Safety of Older Adults Residing in Nursing Homes

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Background Summary

The purpose of this primer is to provide updated information to the patient safety community about the challenges of ensuring the safe care of older adults in Medicare and Medicaid certified nursing homes (NHs) associated with the COVID-19 pandemic, and the federal and state efforts taken to mitigate these challenges. This serves as an update to the original primer, “Coronavirus Disease 2019 (COVID-19) and Safety of Older Adults Residing in Nursing Homes,” originally appearing in PSNet on April 21, 2020, and updated July 30, 2020. This primer is a compilation of information that has impacted the safety of older adults and has been published on federal websites, in professional and academic literature, and in the press. It puts into perspective that, while less than 1% of the U.S. population live in long-term care facilities (e.g., NHs, assisted living) and comprise only 1% of total positive U.S. cases, older adult residents in NHs accounted for 37% of COVID-19 deaths overall until the vaccines became available in December 2020 (CMS COVID-19 Nursing Home Data website). Various factors associated with COVID-19 that negatively impacted patient safety and resulted in poor outcomes for nursing home residents are discussed in this primer, including NH staffing, racial and ethnic disparities, and poor quality of care.

Incidence and Prevalence of COVID-19 in US Nursing Homes

U.S. NHs and other long-term care (LTC) facilities such as assisted living, memory care, and senior centers have been disproportionally impacted by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) that causes COVID-19.[1-3] The most severely impacted of these groups were residents in the approximately 15,400 NHs certified by Medicare and/or Medicaid that house almost 1.3 million residents in the United States.[4] From here on, this primer is focused on the residents in those Medicare/Medicaid certified NHs; any other non-Medicare/Medicaid NHs or facilities such as assisted living or will be referred

to as long-term care (LTC). Most NHs accept post-acute patients from the hospital requiring highly skilled nursing care that is covered by Medicare but NHs also have long-term care residents that may be covered by Medicaid, long term care insurance, or private pay. In the first year of the COVID-19 pandemic, there was a disproportionate number of COVID-19-related deaths among NH residents compared to the general U.S. population, although the disparity decreased as COVID-19 cases increased in the general population.

As of January 16, 2022, the Centers for Medicare & Medicaid Services (CMS) reported 853,910 confirmed COVID-19 NH cases and 145,270 resident deaths, along with 889,968 confirmed NH staff cases and 2,253 staff deaths in Medicare and Medicaid participating NHs.[5] What is striking about these numbers is that more NH staff contracted COVID-19 but staff deaths have been only a small fraction (1.5%) of the number of resident deaths. This reflects the extreme vulnerability of this population of older adults to COVID-19.

Challenges with US Nursing Home Environments and COVID-19

COVID-19 created challenges for the NH industry, revealing and amplifying significant areas of weakness in NH patient safety, particularly infection control and prevention. It is not uncommon for NH to have two or more residents per room with limited separation of living space, increasing the likelihood for viral airborne transmission, a means of COVID-19 transmission that was not fully understood in the early days of the pandemic. The congregate living environment of NHs contributed significantly to the infection control problems during the pandemic.

An additional challenge was the inconsistent reporting of COVID-19 cases and deaths among states in the first months of the pandemic.[6,7] In late spring of 2020, COVID-19 cases continued to steadily increase in NHs. To better capture the numbers of cases and deaths, CMS implemented direct mandatory reporting of all COVID-19 cases and deaths in all Medicare- and Medicaid-certified NHs (that is, NHs that were approved for Medicare- and Medicaid-covered beneficiaries), with the reports due starting in May 2020.[8] Along with the reporting requirement, CMS also required NHs to inform all residents and families of the numbers of COVID-19 cases in their NH and cooperate with the surveillance efforts by the Centers for Disease Control and Prevention (CDC). This transparency effort was recommended and supported by the two largest NH industry associations, Leading Age and American Health Care Association.[8]

The CMS Five-Star Quality Rating System and COVID-19 Incidence

CMS's "Care Compare" webpages provide current data available to the public on its website, which allows patients and families seeking care to compare the quality of care in settings like hospitals and NHs, among others. The Care Compare websites use the Five-Star Quality Rating System to assist potential NH residents and their families in making informed decisions about their options for NH care. The rating system uses three types of data: health inspection, staffing, and quality measures that represent different physical and clinical outcomes for NH residents. Nursing homes are rated from high-quality (five stars) to low-quality (one star) based on these data points.

An early CMS analysis of NHs reporting COVID-19 data found that lower-quality NHs (those with one or two stars) were more likely to have higher numbers of COVID-19 cases when compared with five-star NHs (higher quality), and a CDC study by Bui et al., (2020) had similar findings in a study of West Virginia NHs.

[9-12] In a later 2020 study of California NHs by He et al., higher-quality star ratings were found to be associated with fewer COVID-19 related cases and deaths.[10] Similarly, Figueroa et al. (2020) found that a high incidence of COVID-19 cases in NHs in eight states was associated with lower star quality and safety ratings on the CMS NH Compare website, which is now known as Care Compare.[11] A study conducted by Williams et al. (2021), one of the most recent and largest national studies of the relationship between CMS quality metrics and COVID-19 incidence, also found that higher CMS star quality ratings were associated with lower COVID-19 incidence and mortality.[12] However, other publications, including a New York Times investigation, have found little, if any, association between CMS star ratings and COVID-19 deaths (meaning, a five-star facility did not fare better during the pandemic than a lower-star facility).[13,14] In studies using the CMS Five-Star Rating system, they found that an overall high star rating, a low level of nurse staffing, poor infection control practices, and homes with higher numbers of residents from racial and ethnic minority populations, emerged as important factors associated with COVID-19 infections and resident deaths.[9-18]

Nurse Staffing and Infection Control

Several studies indicated that low nurse staffing levels were associated with greater numbers of COVID-19 cases and deaths.[15-18] These studies reinforced that adequate nurse staffing, particularly registered nurses (RN) and certified nursing assistants (CNA), was an important factor in preventing the spread of infectious diseases such as COVID-19 and improving clinical outcomes. Professional organizations have also supported higher NH staffing to improve patient safety and quality of care, a topic that may gain greater momentum because of the patient safety and quality issues associated with COVID-19.[19-21] The most significant challenges in NHs continued to be retaining adequate RN and CNA staffing levels, ensuring that staff were trained (particularly in infection control and prevention), and that they could provide high-quality and safe care while preventing the spread of COVID-19 to staff and residents.

Adequately trained and competent staffing has long been a challenge in NHs, partly due to a history of poor pay and high staff turnover, problems that have been intensified during the COVID-19 pandemic, with turnover rates as high as 128%.[22] In addition, the new COVID-19-specific tasks increase the burden on staff and reduce the available time that staff have to spend providing care to the residents. Examples of these tasks include donning full personal protective equipment (PPE) before and after providing care to individual residents, helping residents and families communicate without visitation, contact tracing, and managing resident COVID-19 cases and deaths.[15,18,19]

Besides nurse staffing, the need for a full-time infection preventionist (IP) has also been widely promoted, particularly given the long history of poor infection control and prevention outcomes in NHs.[23] CMS mandated an IP as a condition for participation in Medicare and Medicaid in 2016, with a phased implementation process over three years (see 81 FR 68688, Oct. 4, 2016).[24] The requirement was for NHs to have one or more persons whose primary training was in infection control; qualified through education, training, certification, or experience; and who completed specialized training. Initially, the requirement was that IPs had to work at least part-time at the facility to provide management of the infection control and prevention program; however, this requirement was later increased to full time due to the COVID-19 pandemic.[24,25] To assist NHs, the CDC has produced online training for Infection Preventionists that

includes 24 web-based modules totaling approximately 20 hours of training.

The Impact of COVID-19 on NH Residents, Families, and Racial and Ethnic Minorities

COVID-19 took a significant toll on healthcare workers in NHs. Staff losses due to COVID-19 infections and deaths further decreased the numbers of staff available to care for residents, placing additional stress on the workers who were able to work.[26] Additionally, NH staff feared exposure to COVID-19, which increased moral distress on workers.[27] Moral distress has been defined as the painful feelings and psychological disequilibrium precipitated when nurses know what they should do morally, but cannot, due to constraints out of their control such as lack of personal protective equipment (PPE) or lack of beds or respirators. In some cases, NH staff had to make difficult decisions to stay home out of fear or to care for their own families, causing some facilities to close due to lack of staff. For example, one California NH required the evacuation of residents after most of the certified nursing assistants suddenly, and for reasons unknown at the time, failed to report to work.[28] Fortunately, all residents in that NH were successfully transferred to another NH in the region.

The pandemic has had a significant impact on all residents and staff in NHs, even those who were not directly exposed to or infected with COVID-19. In particular, visitor restrictions negatively impacted both residents and staff, since many loved ones regularly assist staff in providing resident care.[29,30] NH experts expressed growing concerns related to depression and anxiety in residents, particularly those with dementia, due to restrictions on family visitation.[31] Some residents complained about social isolation due to the extra precautions required to reduce COVID-19 transmission; visitation ceased, group activities were stopped, and meals were provided in their rooms.[30] The isolation caused considerable negative effects in the many residents who did not have COVID-19, and some family members began to remove their family members from their NHs.[32,33] Experts also raised significant concerns about potential neglect of residents, and the effects of social isolation occurring in NHs due to restricted visitation.[32,34] In the summer of 2020, visitation restrictions began to be lifted in some states, allowing families to visit residents for the first time in months.[35] In March 2021, CMS updated their guidance to allow safe indoor visitation, even if the resident and visitor had not been vaccinated except when the county positivity rate exceeded 10%, the resident had an active COVID-19 infection, or the resident was in quarantine. In international studies, easing visitor restrictions has shown positive effects in terms of improved mood and improvements in resident well-being.[35,36] To date, there is no published research on whether relaxed visitation policies have impacted the numbers of COVID-19 cases or deaths in the United States.

Racial and Ethnic Disparities

Data and reports have indicated that African Americans, American Indians, Alaska Natives, and Latino communities were experiencing higher rates of death due to COVID-19.[37-39] Similarly, in a study of 12,576 U.S. NHs, Li et al. (2020), found that NHs with higher numbers of racial and ethnic minorities reported greater incidences of confirmed COVID-19 cases and deaths.[37] The first of two studies conducted in New York found that hospitalization and death rates were highest in the Bronx, the borough with the highest proportion of African American and Latino populations, greater poverty rates, and lower education achievement, compared with the other four boroughs.[38] A second study had similar data findings, reinforcing that residents in high-poverty neighborhoods typically had more comorbidities; additionally, this

study found that there were fewer frontline workers and fewer intensive care beds in those communities compared with white neighborhoods.[39] Racial segregation in NHs typically mirrors the segregation of the community in which they are located, and is associated with fewer financial resources, greater proportion of Medicaid residents, lower staffing levels, more healthcare deficiencies, and lower quality of care.[39,40] Unfortunately, segregation has been a historic structural problem in NHs that continues to this day and has contributed to higher death rates of racial and ethnic minorities from the COVID-19 pandemic.[40] Researchers have recommended a variety of policy changes including providing disproportionate-share payments for high Medicaid NHs, changes in regional planning of new NHs to address disparities, and greater reinforcement of Title VI admissions processes.[40]

Federal and State Response to COVID-19 in Nursing Homes

The fast spread of COVID-19 imposed significant challenges on federal and state agencies to provide timely guidance, and on NHs to respond to the quickly changing landscape, implement those changes, and still meet the daily healthcare needs of their residents. In response to the rapid spread of COVID-19 and increasing number of deaths in NHs, federal and state government agencies intervened quickly. For example, the CDC published multiple COVID-19 resource documents with the goal of preventing spread and protecting people from severe infection, hospitalization, and death.[41,42] The swiftly evolving situation in NHs required equally quick responses by the federal government, which, understandably, meant that not all responses produced the desired results. Regulatory guidelines on PPE, testing, and visitation, for example, while necessary and important, led to some confusion on the part of NHs, partially because regulations were changing quickly, and state implementation guidelines may have lagged behind federal government publications.[43] Additionally, NHs typically have fewer administrative staff to manage and disseminate these communications and rapidly implement the changes that were aimed at improving safe patient care.[43-45] A Government Accountability Office (GAO) report (GAO-21-191) published in November 2020 highlighted some of these types of issues and made recommendations to various federal government groups to improve communication and clarify guidelines.

COVID-19 Reporting and Testing

In early May 2020, the CMS Quality, Safety & Oversight (QSO) group began to require NHs to report facility resident and staff COVID-19 cases and deaths to the CDC. By May 24, 2020, approximately 12,500 NHs, or approximately 80% of the 15,417 Medicare and Medicaid-certified NHs, had begun reporting the required SARS-CoV-2 resident and staff cases and deaths to CDC's National Healthcare Safety Network (NHSN), and all NHs had reported data by the end of 2020.[5]

Testing was also a significant challenge for NHs; therefore, later in May 2020, CMS published another Quality, Safety & Oversight (QSO) group memorandum to ensure that all U.S. NHs were prepared to respond to COVID-19. Specifically, the QSO-20-30-NH memo reported an interim final rule published in the Federal Register (85 FR 54820), which encouraged state leaders to collaborate with survey agencies to ensure a coordinated effort to support NHs, as well as to enforce CMS policies and regulations. CMS also announced that they would require weekly testing of *all* NH staff in states with a 5% or higher positivity rate to reduce the spread of the SARS-CoV-2 virus.[46]

In July 2020, CMS announced they would send point-of-care testing machines and a limited number of the test kits to approximately 14,000 NHs in the U.S. Unfortunately, this effort ran into several obstacles.[47,48] The first obstacle was the time needed to deploy the 15,000 devices; CMS reported only 600 machines being deployed in the first shipment to the highest-priority NHs.[47] By August2020, it was reported that over 5,500 test machines had been sent to NHs, but some NHs were not allowed to use the test machines due to state requirements related to the sensitivity of the machines.[49] CMS did not distribute the test machines to NHs that did not already have a Clinical Laboratory Improvement Amendments (CLIA) waiver, and at that time the process to get a waiver was taking between 4-12 weeks, although CMS indicated that they would expedite any NH CLIA waiver applications.[50]

Various concerns were voiced about false negative results associated with rapid tests and the fact that they might not meet some of the state requirements. For example, the rapid tests only have an 80% sensitivity, and some states require higher sensitivity minimums.[49] Additionally, NH management needed to address the training of NH staff to administer, track, and appropriately report the test results. Some NHs that received the machines did not use them, citing concerns over the cost and availability of the test kits; several large NH chains were unable to preorder adequate supplies of test kits.[49,50] Another significant concern was that the two manufacturers with Food and Drug Administration (FDA) approval had stated that their rapid antigen tests were designed for patients who are symptomatic, calling into question their value in screening asymptomatic NH residents and staff, which contributed to NHs' hesitance in using the machines.[48]

In response to these concerns, in September 2020, the CDC released interim guidance for rapid antigen testing for SARS-CoV-2 that included the further direction that these rapid tests should be used when the turnaround times for the highly sensitive COVID-19 testing are prolonged.[51] The guidance went on to state that repeated use of the rapid tests may be superior for overall infection control in congregate settings, compared with the highly sensitive tests that take several days to get results.Given that the sensitivity of these tests is lower, the CDC advised that a "negative" result should be considered a "presumptive negative," which means they are preliminary results and should be considered in the context of the clinical situation in that NH and may need follow-up testing.[52] To help NHs with testing, the CDC issued a 1-page handout with links to a number of federal resources. In December 2020, the CDC provided additional training resources to help with training staff to perform point-of-care tests.

Infection Control Training and Enforcement

The Secretary of the Department of Health and Human Services (HHS) has agreements with agencies in every state to survey NHs to ensure the care provided to residents meets quality and safety standards. Typically, a state's Department of Public Health, or similar agency, performs the surveys (the names of the agencies vary). Due to the highly contagious nature of COVID-19 and the number of deaths in NHs, the Senate asked the GAO to review CMS's oversight of pre-pandemic infection control processes in NHs.

The GAO released the report Infection Control Deficiencies Were Widespread and Persistent in Nursing Homes Prior to COVID-19 Pandemic in May of 2020, highlighting ongoing and significant infection control problems in NHs. The report revealed that 82% of NHs had been cited for infection control deficiencies in at least one year between 2013 and 2017, and almost half had been cited multiple times during this time,

more frequently in for-profit NHs, signifying that these were persistent pre-pandemic issues. The GAO report indicated that 99% of these deficiencies were classified by surveyors as not causing any resident harm, and CMS imposed financial penalties on 1% of the NHs that were cited.

In New York City in the spring of 2020, more than 600 NH residents died in 25 NHs that had no recent survey citations for infection control issues.[54] The New York Department of Health (NYDH) surveyed the NHs in April and found them substantially in compliance with published infection control regulations. According to CMS, substantially in compliance means that that any identified deficiencies are minor and pose no greater risk than minimal harm. Despite family reports of the virus spreading between roommates and rooms, a second round of NYDH surveys two weeks later still showed the NHs in substantial compliance with CMS regulations, raising questions about the accuracy of the survey process. Given that this happened in April and May 2020 when staff lacked the knowledge about asymptomatic spread, it is possible that COVID-19 spread in NHs that were following recommended infection control practices valid at the time.

As previously stated, infection control and prevention practices were a long-standing challenge in NHs. Therefore, CMS initiated focused infection control (FIC) surveys to assess each NH's readiness to manage COVID-19 residents.[41] CMS suspended routine or non-urgent NH surveys in March 2020 so they could focus on high-priority health and safety threats, including infectious diseases and abuse allegations.[55] CMS, as part of the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), and in response to incomplete infection control surveys by some states, other reporting challenges, and concerns about the economic impact of COVID-19 on NHs, provided higher payment levels to NHs to be consistent with Medicare-level funding.[56] These higher payments were used, in part, to pay NHs for uninsured residents, healthcare providers for resident care, infection control materials, COVID-19-related expenses, and increased funding to rural regions and tribal groups for NH care. CMS also increased their enforcement surveys and created disincentives (reduction of funding allocation) for state survey agencies that did not complete 100% of the NH-focused infection control surveys within a specified timeframe. The funds from reduced allocations collected through this effort were to be redistributed to the states who had completed their surveys on time.

During the FIC survey process, regular annual surveys were temporarily put on hold. From March 4, 2020 through July 31, 2020, CMS and state surveyors completed 16,987 surveys in 15,158 (98.5%) of U.S. NHs and imposed more than $15 million in civil money penalties on more than 3,400 NHs.[57] In August 2020, CMS announced the resumption of routine inspections, enhanced their enforcement actions, provided updated instructions for states to enforce federal safety guidelines, and put in place measures to keep NHs accountable including civil money penalties for noncompliance with infection control measures. Regular surveys were restarted in September 2020.[56]

CMS also provides technical assistance on infection control through the Quality Improvement Organizations (QIOs), particularly for low-performing NHs or Special Focus Facilities and those in rural areas with fewer resources.[58] This was enhanced with COVID-19 when QIOs were given instructions to refocus their efforts to assist NHs to improve their infection control processes, resulting in some QIOs issuing infection control training documents, providing technical assistance webinars, and implementing

weekly support calls. Many state agencies also provided additional support to NHs during this time to supplement CMS efforts. The QIOs also receive surveillance system data to identify NHs with outbreaks. CMS has listed the multiple public health actions taken to address COVID-19 in NHs on their website.[59]

To further assist NHs in managing COVID-19, the federal government began to deploy federal task force strike teams comprised of clinicians and public health officers from CMS, CDC, and the Office of the Assistant Secretary for Health (OASH) to provide technical assistance and education to NHs with high positivity rates in late July 2020.[40] The teams were to focus on four key areas of support: preventing COVID-19 from entering the NHs, rapidly detecting the virus, preventing transmission of the virus, and managing various staff-related issues. In August of 2020, the federal government also launched a national training program to improve infection control and prevention in NHs.[60] By November 2020, about 13% of NHs had completed this free CMS web-based training. The low participation numbers were at least partially attributed to the small number of NHs that have available computers for online training.[61] In an effort to improve participation, CMS publicly announced the participating NHs to incentivize those that had not yet taken advantage of this training, endorsed by trade organizations.[62] The online training includes five modules that are available on the CMS Quality, Safety & Education Portal.

In addition to assisting the NHs, CMS used the information gathered by the federal task force strike team visits to plan additional training over and above online, on-demand educational modules available to all NHs. The online training is currently available to all NH staff through the QIOs in each state. CMS also provided a series of webinars through the end of 2020 to further assist NHs on topics such as cohorting, readiness, establishing a dedicated COVID-19 center, and COVID-19 testing. Many states also created strike teams and offered intense training for NHs. For example, California sent state strike teams out to conduct training on infection control and continued hosting regular all-facility calls for NHs and infection preventionists.[63] Professional organizations, such as the California Association of Long-Term Care Medicine, also provided additional training.[64] State agencies and the QIOs also continued to provide infection control training to NHs.

AHRQ ECHO National NH COVID-19 Action Network

In September 2020, the Agency for Healthcare Research and Quality (AHRQ) announced the AHRQ ECHO National Nursing Home COVID-19 Action Network, a partnership among AHRQ, the University of New Mexico’s ECHO Institute, and the Institute for Healthcare Improvement (IHI), to provide free intense training and mentorship to all NHs, even if not Medicare/Medicaid-certified to increase the implementation of evidence-based infection prevention and safety practices. The goals were to:

- Keep SARS-COV-2 out of NHs
- Identify residents and staff who have been infected with SARS-COV-2
- Prevent the spread of the virus among staff, residents, and visitors
- Provide safe and appropriate care to residents with mild and asymptomatic cases
- Help NH staff implement best-practice safety measures
- Reduce social isolation for residents, families, and staff

The 16-week training program used a standardized curriculum developed by IHI and leveraged Project ECHO's model of telementoring. The curriculum was continually refined as the pandemic evolved to incorporate new evidence and respond to new topics, such as vaccination. To allow NHs to further implement safety improvements and maintain engagement with peers and mentors, AHRQ created an option for NHs to continue participating in training sessions through August 2021. The curriculum and all related resources are publicly available on the AHRQ website linked above.

The Network established 99 training centers, including leading academic medical centers, large healthcare delivery systems, and quality improvement organizations across the nation. These training centers provided training and mentorship to more than 9,000 NHs in all 50 states, the District of Columbia, and Puerto Rico. Updated information and data can be found on the AHRQ data website.

New Reporting Regulations

In May 2020, CMS established two new federal regulatory deficiency tags to record noncompliance citations with new federal requirements that were previously described.[65] Tag number F884, the first deficiency tag, describes requirements for reporting previously described COVID-19-related data to the CDC NHSN and allows surveyors to monitor whether NHs have completed the required weekly reporting. Tag number F885, the second tag, pertains to the requirement for NHs to report the presence of COVID-19 in the NH to residents, representatives, and families.[60] NHs that have failed to report data to the CDC or inform residents, their representatives, and family members, can be cited, and non-compliance can result in a civil money penalty. CMS has continuously updated their Toolkit on State Actions to Mitigate COVID-19 Prevalence in NHs. The current version (25), released in December 2021, which is a 220-page document covering everything from statewide best practices on cleaning requirements, to mandated reporting, workforce and staffing, testing, infection control, communication, and other resources.[66]

Lifting COVID-19 Restrictions

In late May 2020, CMS issued guidance to NHs on relaxing restrictions in NHs for visitors and advised that any reopening of NHs should lag 14 days behind their community's reopening.[67] The re-openings were to occur over three phases, and the guidance set standards that had to be met for NHs to reopen including:

- Criteria, based on an individual state's level of community transmission, to determine phase progression,
- Status of cases in the NH – absence of new COVID-19 cases,
- Adequate staffing – no staff shortages,
- Adequate testing – all NH residents and staff (including volunteers, vendors, etc.) to receive a baseline COVID-19 test and all NH staff to be re-tested weekly. NHs were to have written protocols for testing, protocols for residents or staff that decline testing or are unable to be tested, and an arrangement with local laboratories to process the tests within 48 hours,
- All resident and visitors to wear cloth face coverings or disposable face masks,
- Adequate access to PPE,
- Local hospitals to have capacity for NH transfers before they can reopen.[68]

Coronavirus Commission for Safety and Quality in NHs

As part of its "Opening Up America Again" plan, CMS announced it had tasked a contractor to form an independent commission responsible for conducting a comprehensive assessment of how NHs responded to the COVID-19 pandemic. The Coronavirus Commission for Safety and Quality in Nursing Homes was convened in early June 2020 and met nine times over the summer.[69] The commission included 25 LTC experts, consumer advocates, academics, state authorities, and residents, and was led by MITRE Corporation, an existing government contractor. CMS provided four objectives to guide their work:

1. Identify best practices for facilities to enable rapid and effective identification and mitigation of SARS-CoV-2 transmission (and transmission of other infectious diseases) in NHs.
2. Recommend best practices as exemplars of rigorous infection control practices and facility resiliency that can serve as a framework for enhanced oversight and quality monitoring activities.
3. Identify best practices for improved care delivery and responsiveness to the needs of all NH residents in preparation for, during, and following an emergency.
4. Leverage new data sources to improve upon existing infection control policies and enable coordinated actions across federal surveyors and contractors (as well as state and local entities) to mitigate the effects of SARS-CoV-2 and future emergencies. [69,70]

The commission acknowledged systemic, long-standing problems in NHs including fragmented funding, lack of coordination of care, and significant workforce shortages. The work of the commission provided 27 recommendations and action steps that they organized into 10 overarching themes, which are outlined in the commission report. Some of the commission's key recommendations were to:

- Provide more training to NH staff on the proper use of PPE,
- Create better guidelines on how to cohort residents and manage visitation, balancing resident safety with the negative impact of social isolation,
- Improve the NH workforce,
- Improve technical assistance to NH staff,
- Place greater emphasis on quality improvement,
- Address the challenges with old physical infrastructure and facility design challenges,
- Make improvements to NH data reporting.[70]

COVID-19 Vaccinations

On December 11, 2020, the FDA issued an emergency use authorization (EUA) for the Pfizer-BioNTech COVID-19 vaccine,[71] and, one week later, they issued the second EUA for the Moderna COVID-19 vaccine.[72] Within days, the Advisory Committee on Immunization Practices (ACIP) published updated interim recommendations for how the vaccine would be allocated across the U.S. with healthcare personnel and residents in LTC facilities being in the highest priority group for vaccination.[73,74] On February 27, 2021, the FDA issued emergency use authorization for the Janssen (Johnson & Johnson) vaccine, the first single dose vaccine and the third vaccine to be made available in the United States to adults age 18 years and older.[75]

The federal government, states, and territories partnered with multiple national and independent pharmacies through the Pharmacy Partnership for Long-Term Care Program to make the vaccines available for NHs. LTC facilities were able to sign up for the program and the CDC facilitated assigning pharmacy partners to each facility that signed up. The pharmacies facilitated vaccinations for NH residents and staff at no cost to the NHs.[76] The CDC also has information on training to administer vaccinations along with training provided by many other professional organizations.[77] One example comes from AMDA, The Society for Post-Acute and Long-Term Care Medicine, namely a COVID-19 Vaccine Education Toolkit, which provides links to a webinar, talking points, a PowerPoint presentation to help medical director members provide information to residents and family, and strategies for improving staff and resident confidence in the COVID-19 vaccines.[78]

From mid-December 2020 to early February 2021, cases and deaths in NHs from COVID-19 began to decrease at a rate that outpaced the national decline in the general population, falling more than 80% from the time vaccines were rolled out.[5] CMS believes that this can be attributed to the agency's prioritization of NH residents and staff. A study published in July 2021 found a 48% decline in new cases in the NHs with vaccinated residents compared to a 21% decline in the NHs that had not yet vaccinated residents, and study authors suggest that COVID-19 transmission may decline within 3 weeks after vaccinating residents.[79]

Unfortunately, the impact of the Delta variant resulted in an uptick in COVID-19. There were 341 confirmed cases in NH residents and 70 deaths in mid-June 2021, which was the lowest number of weekly cases and deaths to date in the pandemic, rising to 5,333 confirmed cases and 565 deaths in the week ending September 12, 2021.[5] The cases were slightly lower for the week ending September 19, 2021, indicating that rates may have peaked and are now coming down. There was an even greater increase in staff cases, from 495 confirmed cases and 5 deaths at the lowest point in mid-June 2021, to 7,497 confirmed cases and 22 deaths in the week ending September 5, 2021, with a similar decrease in the following weeks based on data collected as of September 19, 2021.[5] And, while 84.5% of NH residents had been vaccinated as of September 19, 2021, only about 65.4% of NH staff have been vaccinated.[4] The persistently low staff vaccination rates were among the reasons for CMS to add a requirement for NHs to vaccinate staff as a condition to participate in the Medicare and Medicaid programs in order to receive any funding from those federal programs.[80]

Despite improvements in NHs cases of COVID-19 as a result of high numbers of vaccinations of residents, the Omicron variant has caused another rise in nursing homes cases.[81] According to Kaiser Family Foundation, there was a 225% increase in reported cases on January 2, 2022 from the previous week and a 48% increase in resident deaths.[81] The increases in NH staff cases were even higher at 277%, which may be attributed to the fact that NH staff vaccinations were lagging behind resident vaccinations. NH residents also had higher rates of boosters (54%) compared with staff (22%).[81] This raises many concerns about the impact of COVID-19 variants in the future. Even though Omicron is thought to be less severe, older adults in NHs remain at very high risk, particularly if they have not been fully vaccinated and received a booster.

Booster Vaccinations

In August 2021, the Pfizer-BioNTech (now marketed as Comirnaty) vaccine received full FDA approval.[82] In September, the FDA announced the emergency use authorization for a booster dose of the Pfizer BioNTech COVID-19 vaccine for adults aged 65 years or older, and for adults aged 18-64 years with underlying conditions that put them at high risk or who have frequent institutional or occupational exposure and who have received the primary series of two vaccines at least 6 months earlier.[83] CDC Director Dr. Rochelle Walensky advocated for older adults living in NHs and those at high risk to receive the booster vaccine along with staff working in NHs.[84] LeadingAge, the trade organization for not-for-profit NHs released a booster shot toolkit for NHs in early October.[85] Unfortunately, there were several reports in November indicating that COVID-19 booster rates were lagging in many NHs. The Boston Globe reported that only 27% of Massachusetts NH staff had received booster shots by October 24, 2021. In late November, the New York Times reported new outbreaks of COVID-19 in several NHs that were associated with waning immunity and delayed rollout of boosters as one of the causes.[86] Dr. Walensky confirmed that hospitalizations for COVID-19 were higher in NH residents who had not received the booster in a White House briefing on November 17, which demonstrates that booster shots are working as intended.[87] Unfortunately, as of December 31, just over 56% NH residents and staff have received the COVID-19 booster based on data downloaded from the COVID-19 Nursing Home Data website.[5]

Conclusion

The COVID-19 pandemic swept through the United States in 2020 and 2021, presenting a significant challenge to healthcare systems throughout the nation. Nowhere was there a more devastating effect than on older adults living in NHs. While considerable efforts were put forth by the federal and state governments, the NH industry, and professional organizations, the fact remains that by the end of 2021 there were almost 750,000 NH resident confirmed cases and 142,000 resident deaths, as well as over 700,000 NH staff confirmed cases and 2,100 staff deaths.[5] This pandemic revealed weaknesses in the infection control and prevention programs in many U.S. NHs and pointed out some potential gaps in the survey processes meant to insure quality of care. And, although many NH residents and staff have been vaccinated and the numbers of cases and deaths have decreased overall, the uptick in cases from the Delta and Omicron variants may present a persistent danger to older adult NH residents. Waning vaccination immunity six months after receiving the vaccine series points to the need for booster shots, without which older adults are at even higher risk for contracting COVID-19. It is essential that NH residents, staff, and visitors be vaccinated and up to date with CDC's COVID-19 vaccination guidelines in order to provide a safe environment for older adults.

This primer focuses on the vulnerability of the older adult NH population to the SARS-CoV-2 virus and highlights the significant efforts of the federal and state governments to implement policies and regulations aimed at reducing the negative impact of the COVID-19 pandemic on adults 65 years and older in NHs. It also emphasizes the importance of the NH industry, healthcare professionals, and federal and state governments working collaboratively to make the necessary long-lasting policy changes to sustain patient safety improvements for this population.

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