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The Impact of COVID-19 on Residents of Skilled Care Facilities Throughout the United States

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The world as we knew it was turned upside down in December of 2019. A small cluster of patients were admitted into a hospital in Wuhan City, in the Province of Hubei, China. Their initial diagnosis was pneumonia of "unknown etiology." There were five patients hospitalized and one of these patients died. In early January, 41 patients were hospitalized in the same town, and the presumptive origin of the infection was from other patients and locations throughout the hospital. Many infected people had been exposed to the wet animal market in Wuhan City and the reservoir host spreading the infection to humans was identified as a mammal or bird, possibly a bat. By the end of January, there were 7734 cases of COVID-19 (2019-new corona virus) in mainland China, and the virus had spread to 90 countries worldwide, including the United States.

The first person-to-person transmission of COVID-19 was reported in the United States on January 20, 2020, in Snohomish County, in the state of Washington. In less than one month, the first nursing home patient was diagnosed with COVID-19 in King County, Washington. The initial patient and the nursing home patient were in facilities that are 25 miles apart. By March 18, there were 101 residents in the same nursing home with confirmed COVID-19, 50 health care workers and 16 visitors were also infected. The hospitalization rates for the residents was 33.7%.

Further, the virus had spread to 30 facilities in the same county. Currently, there are more than 17,000 nursing homes in the United States with 402,000 residents diagnosed with COVID-19, this represents 8% of all confirmed COVID-19 cases in the U.S. Further, 68,000 nursing home resident deaths account for 41% of the COVID-19 deaths in the U.S. A single state reported that 81% of COVID-19 cases were isolated to their nursing homes.

The key comorbidities resulting in poor prognosis from the virus are age and underlying chronic conditions. The average age of a nursing home resident is approximately 82. The vulnerability of COVID-19 among patients suffering comorbidities was noted from the Washington nursing home data (% COVID-19 diagnosed are noted in parentheses): hypertension and cardiac disease ($\geq 60\%$), renal disease (40%), diabetes, pulmonary disease and obesity ($\geq 30\%$). These

same factors are key criteria used to qualify patients for initial admission into a nursing home and singles out nursing home residents as a particularly vulnerable population for infectious disease. Nursing home residents are particularly vulnerable to COVID-19 because of their frailty, and health-care personnel working in nursing homes are also vulnerable because of high personnel turnover rates, and many of the support staff have second jobs at other locations.

A vaccine or antiviral medication may prove to be efficacious against the spread of COVID-19; however, vaccines are still in developmental phases. Therefore, residents and health care personnel continue to be at risk for acquiring and transmitting the virus. There is a continued risk of severe outcomes or death in nursing home settings. The interim solution to preventing the spread of the virus is to use established preventative measures provided by the U.S. Centers for Disease Control and World Health Organization (WHO).

WHO has provided infection protection control (IPC) for nursing homes. Their policy includes training and education to nursing home staff and residents, hand hygiene and respiratory etiquette, promoting physical distancing, and monitoring and auditing the IPC program. WHO also emphasizes early detection, isolation and treatment of COVID-19 cases and identifying and controlling the source to prevent further spread of the infection.

A well-organized plan is key and the best defense for the prevention and spread of COVID-19 in nursing homes. This is a public health imperative, and has the potential of preventing the infection of as many as 40% of cases and 8% of deaths from COVID-19 in the United States and this benefit translates to all countries where nursing home care as well as care for our aging populations continues to grow exponentially.

Key Words: COVID-19, US Nursing home, WHO, infection protection control (IPC), comorbidities

REFERENCE

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