Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Intensive Medicine and Nursing Home Care in Times of SARS CoV-2: A Norwegian Perspective

Data from the *Norwegian Intensive Care Registry* show a median ventilation time of 8.2 days for SARS CoV-2 infected patients admitted to intensive care in Norway.[1] At the time of writing (18th April 2020, regular hospital stays are lasting between three to four weeks. Currently, 155 infected patients are undergoing treatment in hospitals; 61 are admitted to intensive care, and 47 people are ventilated.[2] So far in Norway, 6992 people have tested positive and 162 people died; 3 died at home, 64 in hospitals, and 95 died in 22 nursing homes. The average age of the deceased is 84 years; 55% have been men. The average daily costs for a bed in intensive care units, regular hospital wards and in nursing homes are $4,000 USD, $900 USD, and $180 USD, respectively. The Norwegian Directorate of Health recommends that nursing home patients should not be transferred to intensive care in hospitals including respiratory treatment because of high mortality rates.

Norway has a well-established, public financed health care system. Nine-hundred nursing homes with 41 000 beds are available for 5.4 million inhabitants. About 14% of those older than 80 years are living in nursing homes; 80% have dementia; 75% are female. Every year, 20,000 people die in a nursing home; these represent 57% of all deaths in Norway.[3]

This SARS CoV-2 driven increase in nursing home mortality has placed emphasis on the need for Norwegian healthcare professionals to develop proficiency in end-of-life palliative care.[4] SARS CoV-2 increases the likelihood of sudden acute medical events such as lung- and heart failure with dyspnea and hypoxia, sepsis, and kidney failure.[5,6] Concomitant symptoms such as fever, cough, and shortness of breath require oxygen therapy especially, in people with weak muscles.[5-7] About 60% develop bilateral pneumonia with increased mucus production. Hypoxia related delirium, agitation and significant disabling anxiety is seen in people with dementia.[8]

All nursing homes in Bergen are closed for visits from 12th of March 2020, similar to other municipalities in Norway. In the absence of direct contact, we have noted how family members speculate what is going on behind the closed doors. This is driven by concerns around loved-ones' well-being, and whether they may experience a negative development not only because of the imminent danger of SARS CoV-2 but because of isolation and restraining orders? Per regulations, relatives are allowed to visit when a patient is expected to die in a short time. However, there are patients with acute serious illness with a particular need for companionship; visits can have a positive impact. When exceptions are made, the staff must strictly consider the importance of the visit against the risk of infection. Alternative ways of communication, such as video calling or use of tablets, are recommended to guarantee that the patient's values and wishes can be heard. Of special importance however, is the need for advance care planning.[9] This is a recurring process between the patient, family members, and the treating physician about values and wishes around life-extending treatment. Such conversation has to be initiated well in advance of the decline in mental and physical function.

While the impact of SARS CoV-2 is very much evolving, our experience managing patients in the nursing home environments has helped us pinpoint two key issues that determine outcomes:

(1) What basic parameters can be applied to minimize emergence of behavioral and psychological symptoms in dementia?
(2) How can healthcare professionals at home/nursing home

be updated to increase their knowledge in communication around advance directives, end-of-life palliative care, and the ability to identify imminent dying?

Clinicians' ability plan around these two anchoring clinical issues will likely determine nursing home outcomes as the pandemic progresses.

AUTHOR CONTRIBUTIONS

Bettina S. Husebø and Line I. Berge have both submitted equally to this letter.

DISCLOSURE

Bettina S. Husebø and Line I. Berge do not have any conflicts of interest to declare.

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