

The architecture of social distancing for dementia

Dear Editors,

Frail elderly residents and people with dementia (PWD) are particularly vulnerable to COVID-19. In Italy, dementia was assessed as one of the most common comorbidities (11.9%) among COVID-19 positive deceased patients.¹ In the Netherlands, death rates in institutions almost doubled in the first week of April.* Nursing homes and Special Care Units (SCU's) for PWD comprise 40% of these institutions. And probably more than half of the nursing home residents are diagnosed with moderate to advanced dementia. A nursing home in Washington State reported a case fatality rate of 33.7% among 101 residents.² COVID-19 poses a great threat for all nursing home residents and PWD in particular. Prevention guidelines issued by the Dutch Public Health Department include frequent washing of hands, coughing and sneezing in the elbow, use of paper tissues, social distancing by 1.5 m and staying at home as much as possible.[†] These guidelines also apply to SCUs, although people with dementia hardly comply with the rules and daily caregiving (washing and dressing) from a distance is not possible. Therefore, professionals promote continuation of daily life as before COVID-19 as much as possible.[‡] The Dutch government prohibits all visits and group activities. Furthermore, in cases of confirmed infection, the protocol prescribes isolation of the group or ward.[§] Thus, protecting the other residents of the SCU, but potentially endangering all residents in the isolated ward. In addition, the use of personal protective equipment (PPE) is required, which causes further loss of social contact.

Our research focuses on the effect of the physical environment on well-being and quality of life of PWD. Possible solutions of the physical environment that can compensate for this loss are being implemented on a trial-and-error basis. Examples are glass-partitioned supplementary rooms for visits from family members^{||} and technological innovations such as telepresence robots, video calling and other technological solutions. One example is the "kuierbox"[#] (direct phone-connection situated at a window of the SCU). While these solutions

may enable safe social engagement for PWD, they are also reported to be confusing and distressing for people with advanced dementia.

The high level of dependency of PWD on caregivers impedes the possibility of safe behaviors, for instance, physical distancing or hand washing. Complete social isolation in combination with the use of PPE by caregivers would technically be the closest to guaranteeing infection prevention. But the evidence of increased restlessness and agitation, deteriorating quality of life and health outcomes by social deprivation is overwhelming.³ Moreover, family members increasingly oppose to complete isolation. While the potential impact of current measures is disturbing, one can only hope that the measures are temporary. And until there is a permanent solution, innovative design features can help prevent social deprivation as well as the spread of COVID-19 in existing SCUs, for example, adjustable retrofitting to enable isolation of individuals and small groups, increased access points to the building to prevent merging traffic, the use of acrylic glass screens and ventilation to maximize indoor air quality.

Moreover, recurrence of COVID-19 or of any other epidemic or pandemic outbreak requires a fundamental change of the physical environment for PWD. We need creative minds and interdisciplinary cooperation, including architecture, elderly care medicine, facility management, interior design, nursing and real estate, to rethink current building designs to prevent both infection and solitude. Additional and new physical environments may provide more spacious passages, flexible compartmentalization, super-efficient working routines, useful sight lines, ventilation and air quality, flexible logistics and circulation of SCUs to prevent merging traffic,^{||} to enhance social engagement, intuitive technological solutions, and further use of protective screens and dividers. So, first, creative solutions must be found, tested and applied that can prevent infections and facilitate social engagement at the same time. Second, we need to address ethical issues concerning the balancing of preventive measures vs quality of life.

We declare no competing interests.

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*<https://www.cbs.nl/nl-nl/nieuws/2020/16/sterfte-onder-bewoners-van-institutionele-huishoudens-bijna-verdubbeld>, accessed on April 24, 2020.

[†]<https://www.government.nl/topics/coronavirus-covid-19/tackling-new-coronavirus-in-the-netherlands>, accessed on April 24, 2020.

[‡]<https://www.actiz.nl/nieuws/tips-met-betrekking-tot-isolatie-bij-dementie-thuis-of-in-verpleeghuis>, accessed on April 24, 2020.

[§]https://www.verenso.nl/_asset/_public/Nieuws/20-03-2020-COVID-19-Draaiboek-CORONA-cohort-verpleging-en-hygiënemaatregelen-DEF.pdf, accessed on April 24, 2020.

^{||}[https://www.gelderlander.nl/privacy-gate/accept?redirectUrl=%2fzevenaar%2fverpleeghuis-in-zevenaar-komt-met-bouwkeet-voor-bezoek-weer-even-samen-als-vanouds%7ea4aa0011%2f&pws=functional%7Canalytics%7Content_recommendation%7Ctargeted_advertising%7Csocial_media&days=390&referrer="](https://www.gelderlander.nl/privacy-gate/accept?redirectUrl=%2fzevenaar%2fverpleeghuis-in-zevenaar-komt-met-bouwkeet-voor-bezoek-weer-even-samen-als-vanouds%7ea4aa0011%2f&pws=functional%7Canalytics%7Content_recommendation%7Ctargeted_advertising%7Csocial_media&days=390&referrer=), accessed on April 24, 2020.

[#]<https://www.tubantia.nl/hof-van-twente/familie-komt-verpleeghuis-niet-meer-in-maar-ingoor-hebben-ze-er-iets-op-gevonden-a8c9faab/?referrer=https://www.herfstzongoor.nl/nieuws/26/babbelen-via-de-kuierbox>, accessed on April 24, 2020.

^{||}Special attention is needed in relation to fire-safety, provisioning, safe access, etc.

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Affiliation 5 was added to the list of affiliations for author Mark P. Mabach.]

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