Beyond Age—Improvement of Prognostication Through Physical and Cognitive Functioning for Nursing Home Residents With COVID-19

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The rapid spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has imposed multilevel challenges on societies everywhere, from abrupt changes in our day-to-day lives to overwhelming new pressures on health systems worldwide. Although there are many devastating effects of coronavirus disease 2019 (COVID-19), few compare with the pandemic’s terrible burden on nursing home residents, their families, and their health care clinicians.

As of October 25, 2020, the US Centers for Medicare & Medicaid Services has reported more than 435,000 suspected or confirmed cases of COVID-19 in nursing home residents in the US, with about 64,000 deaths. These numbers indicate that SARS-CoV-2 has likely infected nearly 30% of the US nursing home population. Despite these cases representing fewer than 5% of the total US events, it is estimated that at least 40% of COVID-19-related deaths occurred in older individuals living in one of the 15,674 nursing homes across the country. The situation is similarly alarming in other countries. The World Health Organization has reported that approximately half of all COVID-19 deaths in Europe have occurred in older adults living in nursing homes.

As early as February 2020, data suggested that older adults with comorbidities were most vulnerable to COVID-19. Although that should have raised red flags regarding nursing home residents, the setting was not initially prioritized by health authorities, and resources were primarily directed to hospital care. However, as the disease spread in countries like Italy and Spain, the substantially high mortality observed in nursing homes became a pressing issue. Researchers started discussing strategies to mitigate viral transmission in nursing homes, and recommendations to help health professionals fight the pandemic in that setting were published. Nevertheless, to our knowledge, few studies have explored how to measure COVID-19 prognosis in the context of nursing homes. As a result, what little information is available comes from small samples or facility-level data, limiting their generalizability in identifying nursing home residents with a higher risk of adverse outcomes.

In this issue of JAMA Internal Medicine, Panagiotou and colleagues advance what we know about mortality risk stratification in nursing home residents with COVID-19. Their study provides a detailed analysis of 5256 symptomatic individuals residing in 351 nursing homes in 25 US states. The authors retrieved data from electronic medical records (EMRs), daily nursing home infection logs, and Minimum Data Set and found that about 1 in 5 participants died within 30 days of COVID-19 diagnosis, a slightly lower rate than that verified in hospitalized patients. They also observed that certain demographic characteristics (older age and male sex), comorbidities (diabetes and chronic kidney disease), acute symptoms (fever, hypoxia, tachypnea, and tachycardia), and measures of functioning (cognitive and physical impairment) were significantly associated with a higher risk of death. Altogether, these risk factors offer a more comprehensive picture of COVID-19 prognosis in nursing home residents that might help clinicians care for this population.

While health professionals are most likely watchful for widely reported risk factors in COVID-19 (eg, older age, comorbidities, and severity of disease), the work from Panagiotou and colleagues underscores the importance of examining measures of functioning when assessing the prognosis of nursing home residents with the disease. In a scenario in which age is unlikely to provide additional prognostic granularity (ie, most nursing home residents have advanced age), assessing a broader spectrum of vulnerabilities can help identify those who are less likely to survive after being infected with SARS-CoV-2.

Unlike younger persons, for whom the clinical severity of a disease is usually sufficient to determine the risk of adverse outcomes, frail and older adults are often burdened by mul-
tiple chronic conditions that complicate the interpretation of standard physiological parameters and muddle the stratification of risk. In cases like these, measures of functioning can add valuable prognostic information. Panagiotou and colleagues did not observe a significant association between certain chronic conditions (ie, chronic obstructive pulmonary disease, coronary artery disease, heart failure, and hypertension) and mortality, contrary to previous COVID-19 research in other settings and populations. However, the authors verified that cognitive and physical impairment helped identify nursing home residents with COVID-19 who had a high mortality risk. Clinicians should be aware that cognitive and functional assessments, rather than a narrow evaluation of International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10) diagnoses and physiologic parameters, are probably more useful tools to estimate mortality risk in nursing homes.

Most prognostic studies in patients with COVID-19 have emphasized the predictive performance of some laboratory tests. Nonetheless, these are not readily available in nursing homes, particularly in the current scenario of limited resources. Therefore, the work from Panagiotou and colleagues is further beneficial by identifying predictors of death that are easily obtained, accessible on medical records, or quickly collected during a short bedside evaluation. The study is also an example of how to make better use of clinical notes. Although EMRs have been widely adopted in the US, they have mostly served as data storage platforms, ranging from problem lists to test results, without communicating valuable clinical information. Panagiotou and colleagues have demonstrated that well-structured and comprehensive EMRs can help clinicians conduct research and improve decision-making. Additionally, their results suggest that measures of functioning should always be documented in EMRs, at least in the context of geriatric care.

The study opens a window to other critical aspects of SARS-CoV-2 infection in the nursing home population. First, the results indicate the importance of geriatric syndromes in predicting mortality among nursing home residents with COVID-19, which should stimulate researchers to explore the prognostic value of other age-related conditions, such as undernutrition, sensory deficits, depressive symptoms, and polypharmacy. Second, despite examining only symptomatic patients with COVID-19, the authors observed a very low prevalence of fever, hypoxia, and tachypnea, confirming that typical disease presentations are uncommon in frail older adults. Therefore, nursing home residents with acute nonspecific signs and symptoms should be tested for COVID-19, particularly in epicenters of the pandemic. Finally, the knowledge that patients with disabilities are more vulnerable to adverse outcomes from COVID-19 reinforces the need for governments to provide adequate testing capabilities and personal protective equipment to nursing homes. These measures, along with identifying high-risk patients, are also crucial to establish local safety guidelines and gradually reopen nursing homes for visits and other social activities.

In conclusion, Panagiotou and colleagues have identified easily obtained mortality risk factors for nursing home residents with COVID-19. Health professionals should use this information to support conversations with patients and their families about goals of care (ie, advanced care planning). Such information can also help them when they are required to make quick decisions on the allocation or limitation of medical resources (eg, hospital transfers) according to patient-level characteristics, values, and wishes. As the pandemic continues its global assault, we must avoid repeating past mistakes. It is time that we recognize that age alone does not sufficiently explain how older persons respond to COVID-19. Moreover, we should acknowledge the importance of going beyond traditionally assessed mortality risk factors and promote the evaluation of cognitive and physical functioning. Above all, in a time of so much divisiveness and insecurity, we must not make a bad situation worse by succumbing to ageism when measuring prognosis in nursing home residents with COVID-19.