Reducing Unnecessary Hospitalizations of Nursing Home Residents

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It’s a common scenario: a 90-year-old resident of a U.S. nursing home — call her Ms. B. — has moderately advanced Alzheimer’s disease, congestive heart failure with severe left-ventricular dysfunction, and chronic pain from degenerative joint disease. She develops a nonproductive cough and a fever of 100.4°F. The night nurse calls an on-call physician who is unfamiliar with Ms. B. Told that she has a cough and fever, the physician says to send her to the emergency room, where she’s found to have normal vital signs except for the low-grade fever, a normal basic-chemistry panel and white-cell count, but a possible infiltrate on chest x-ray. She is admitted to the hospital and treated with intravenous fluids and antibiotics. During her second night in the hospital, Ms. B. becomes confused and agitated, climbs out of bed, and falls, fracturing her hip. One week after admission, she is discharged back to the nursing home with coverage under the Medicare Part A benefit. The episode results in about $10,000 in Medicare expenditures, as well as discomfort and disability for Ms. B.

There is an alternative scenario, however, in which, when the same symptoms develop, the night nurse evaluates Ms. B. using a standardized protocol and calls an on-call nurse practitioner (NP) who visits the nursing home daily. “Late this afternoon, the resident developed a nonproductive cough and a temperature of 100.4°F,” the nurse reports. “Her other vital signs are normal, and her lungs sound clear. She isn’t complaining of shortness of breath or chest pain, and there is no leg edema.

I think we can watch her and call back if something changes.” The NP agrees and says she’ll see Ms. B. in the morning, at which point she finds a persistent low-grade fever and crackles in the right posterior lung field. After consulting with Ms. B.’s daughter, who serves as her health care proxy, the NP orders an oral antibiotic and increased oral fluid intake. Ms. B. recovers over the next several days. The episode costs Medicare about $200 and results in no complications for Ms. B.

More than 1.6 million Americans live in nursing homes. Hospitalizations are common in this population; in 2006, 23.5% of the people admitted to a post-acute-care skilled-nursing facility were rehospitalized within 30 days.1 Several studies suggest that many of these hospitalizations are inappropriate, avoidable, or related to conditions that could be treated outside the hospital setting —
and they cost more than $4 billion per year.\textsuperscript{1-3} Avoidable hospitalizations are also common among long-stay residents of nursing homes (see graphs).\textsuperscript{2-4}

In many clinical situations, more nursing home residents with acute changes in their clinical condition could be cared for safely and effectively without having to be transferred to a hospital. But the causes of preventable hospitalizations in this population are complex. One fundamental problem is not clinical but financial, stemming from a misalignment of Medicare and Medicaid: state Medicaid programs do not benefit from savings that Medicare accrues from prevented hospitalizations of nursing home residents, even though the nursing home incurs expenses when managing changes in condition without hospital transfer. In addition, nursing homes have a financial incentive to hospitalize residents who have Medicaid coverage, because after a 3-day inpatient stay, the resident may qualify for Medicare Part A payment for post-acute care in the nursing home at three to four times the daily rate paid by Medicaid.\textsuperscript{4}

Multifaceted strategies will be needed to address the current incentives for hospitalization if we are to improve nursing home care and prevent unnecessary hospitalizations, with their related complications and costs. Two caveats are critical. First, not all hospitalizations for conditions that can theoretically be managed outside an acute care hospital are preventable. Second, given fiscal constraints and the dearth of health care professionals trained in geriatrics and long-term care, not all nursing homes have the capacity to safely evaluate and manage changes in the condition of the clinically complex nursing home population. Setting unrealistic expectations and providing incentives to poorly prepared nursing homes to manage such care rather than transferring residents to a hospital could have unintended negative effects on the quality of care and health outcomes.

Interventions designed to reduce preventable hospitalizations should therefore be directed at facilities that have the infrastructure, leadership commitment, and culture of quality and safety necessary to undertake more acute care. Quality-assurance and performance-improvement programs required by the Affordable Care Act (ACA) will help focus nursing homes on efforts to reduce preventable transfers. Interventions to Reduce Acute Care Transfers, or INTERACT (http://interact2.net), is one such program that has shown promise;\textsuperscript{5} it provides clinical practice tools, communication strategies, and documentation standards that enhance the nursing home’s ability to identify, evaluate, and manage conditions before they become serious enough to necessitate hospital transfer. In addition, it addresses advance care planning that might result in a comfort care plan as an alternative to hospitalization for residents at the end of life, when the risks associated with hospital care
Who Owns Federally Funded Research? The Supreme Court and the Bayh–Dole Act

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Collaboration between academic researchers and private companies has long been essential to medical innovation and development because it brings together parties with different expertise, data, or technologies. Such cooperative efforts usually begin with a contract that outlines the parties’ expectations and ownership of any output. A recent Supreme Court decision shines a bright light on these contracts and addresses the question of whether the public has any formal interest in agreements made involving federally funded research.

The case related to a long-simmering dispute between Stanford University and Roche Molecular Systems regarding ownership of patented technologies. The public has never been formally involved. The Supreme Court decision could have implications for the way companies and academic institutions negotiate and manage intellectual property rights.

The Court ruled that universities are entitled to retain ownership of inventions made by their employees while performing their duties, provided that the inventions result from work that the employees did as part of their employment. The decision overturned a lower court’s ruling that had favored Roche. The Supreme Court’s decision is expected to have far-reaching implications for the way universities and companies negotiate and manage intellectual property rights.

In sum, the Supreme Court decision is an important step in clarifying the legal landscape for federally funded research. It is likely to have significant implications for the way universities and companies negotiate and manage intellectual property rights, and it may have broader implications for the way we think about the role of the public in scientific research.

Disclosures forms provided by the authors are available with the full text of this article at NEJM.org.

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