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News & clinical findings about serious illness

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New Trend: More Americans Now Dying at Home Than in the Hospital

A greater proportion of natural deaths now occur at home rather than in acute care facilities, reversing a decades-long national trend, and necessitating an increased focus on access to quality home care and caregiver support, according to a report from Duke University and Harvard Medical School researchers, published in the *New England Journal of Medicine*.

“Home has surpassed the hospital as the most common place of death in the United States for the first time since the early 20th century,” write the authors. “These findings should lead to prioritizing

improvements in access to high-quality home care for older Americans with serious illnesses.”

Although hospital deaths remained common in 2017, the percentage of patient deaths in the hospital in the U.S. (29.8% of natural deaths) was significantly lower than in either Canada (59.9%) or England (46.0%), the authors note.

Investigators analyzed data from the Centers for Disease Control and Prevention and the National Center for Health Statistics for natural deaths in the U.S. from 2003 to 2017 (n = 35,166,711), with cause of death defined as the medical condition that led directly to death as recorded by the physician on the death certificate. The largest proportion of decedents were aged 65 to 84 years (44.8%) at the time of death. Associations between cause of death and location of death were evaluated as odds ratios (ORs) with 95% confidence intervals (CIs), using cancer as the reference.

to 30.7% of all natural deaths from 2003 to 2017.

- Hospital deaths decreased from 39.7% to 29.8% during that period.
- The percentage of deaths in nursing homes decreased from 23.6% to 20.8%.
- Deaths in inpatient hospice facilities increased from 0.2% to 8.3%.

Patients who were of an ethnic/racial minority, younger, and female had lower odds of death at home than did those who were older, male, and white. Most notably, black patients had lower odds of dying at home (OR, 0.80; 95% CI, 0.78 to 0.83) than did whites and were 47% more likely to die in a hospital (OR, 1.47; 95% CI, 1.46 to 1.48). While Hispanics were 41% more likely to die in a hospital, their odds of home death were similar to those of non-Hispanics.

ASSOCIATION OF LOCATION OF DEATH WITH CAUSE OF DEATH

- The greatest odds of hospital death were found among patients with respiratory disease (OR, 2.57; 95% CI, 2.54 to 2.61) and stroke (OR, 2.24; 95% CI, 2.16 to 2.32), compared with patients with cancer.
- Cancer patients had the highest odds of death at home or in an inpatient hospice facility and the lowest odds of death in a nursing home.
- Patients with cardiovascular disease

CAUSE OF NATURAL DEATH, 2003 TO 2017

- Cardiovascular disease, 29.3%
- Cancer, 24.5%
- Respiratory disease, 10.5%
- Dementia, 7.9%
- Stroke, 5.9%
- Other, 21.9%

KEY FINDINGS

- Deaths at home increased from 23.8%

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NEWSLINE

New Trend: More Americans Now Dying at Home (from Page 1)

had the second-highest odds of home death (OR, 0.73; 95% CI, 0.72 to 0.74) and the lowest odds of death in a hospice facility (OR, 0.28; 95% CI, 0.28 to 0.29).

- Dementia patients had the lowest odds of hospital death (OR, 0.38; 95% CI, 0.37 to 0.38) and the highest odds of nursing home death (OR, 4.63; 95% CI, 4.45 to 4.80).

“The trends noted here represent progress,” write the authors. “[H]owever, more information about the experience of patients dying at home is needed to develop policies and services that ensure high-quality end-of-life care.”

HOME DEATHS RISE FOR CARDIOVASCULAR PATIENTS

The research team conducted a specific analysis of trends in place of death among patients with cardiovascular disease (CVD), using the same federal databases on natural deaths from 2003 to 2017, and publishing their findings in the *Journal of the American College of Cardiology*. As with the general population, deaths at home among cardiovascular patients also exceeded hospital deaths.

“Cardiology has lagged behind other specialties in focusing on end-of-life care, but we’re now seeing more interest in this important area,” says senior author Haider Warraich, MD, of Harvard Medical School and Brigham and Women’s Hospital, Boston. “We’re seeing that more people are dying at home than at any other location, but we need to better understand what that experience is like, so that we can focus our energy on the needs of our patients.”

CVD, the leading cause of death in the U.S., was identified by investigators as the cause of death in 12.6 million patients from 2003 to 2017, with nearly half of the deaths (48.2%) attributed to ischemic

heart disease, followed by cerebrovascular disease or stroke (16.7%), heart failure or cardiomyopathy (10.6%), and hypertensive heart disease (8.1%).

KEY FINDINGS

- Home deaths among patients with CVD increased from 21.3% (n = 192,986) to 30.9% (n = 265,133) from 2003 to 2017.
- Hospital deaths decreased from 36.5% (n = 330,905) to 27.3% (n = 234,703).
- Deaths in nursing facilities decreased from 25.1% (n = 228,140) to 20.6% (n = 176,787).
- Deaths in hospice facilities averaged 3.2% over the time period, with a high point of 6.0% by 2017.

This increase in the proportion of home and hospice facility deaths and decrease in hospital and nursing facility deaths was manifest across CVD diagnosis subtypes, with the greatest increase in home deaths (about +10%) found among patients with ischemic heart disease or hypertensive disorders.

Patients with aortic stenosis and stroke had greater odds of hospital death (OR, 2.47; 95% CI, 2.39 to 2.56 and OR, 2.14; 95% CI, 2.07 to 2.20, respectively) than those with ischemic heart disease. “Palliative care is underutilized in patients with aortic stenosis, and our finding of greater hospital deaths among patients with aortic stenosis may reflect a need for earlier use of palliative services,” the authors comment.

RACE/ETHNICITY AND SITE OF DEATH

- Compared with white patients, black patients had greater odds of hospital death (OR, 1.29; 95% CI, 1.27 to 1.30) and reduced odds of home death (OR, 0.84; 95% CI, 0.81 to 0.87) across the study period.

- The gap between the proportion of blacks and whites who died in the hospital increased during the study period, from 4.9% to 5.3%.
- Hispanic patients had greater odds of hospital death (OR, 1.49; 95% CI, 1.47 to 1.50) compared with non-Hispanic patients, and lower odds of home death (OR, 0.94; 95% CI, 0.93 to 0.96).
- However, the difference in the proportion of hospital deaths between Hispanics and non-Hispanics fell from 10.2% to 7.8% during the study period.

“Care preferences and experiences of minority patients and caregivers deserve further attention,” write the authors. “Demographic and disease-related factors should be considered in designing patient-centered interventions to improve end-of-life care.”

The odds of home and hospital death decreased with age, while the odds of death in a nursing or hospice facility increased. Compared with those aged < 65 years, for example, decedents aged > 85 years were more likely to die in a nursing home (OR, 9.81; 95% CI, 9.40 to 10.25) or hospice facility (OR, 3.10; 95% CI, 3.02 to 3.19).

GEOGRAPHIC VARIATIONS

- The Mountain census region had the highest proportion of CVD home deaths (37.0%) and the lowest proportion of hospital deaths (23.6%) in 2017.
- The greatest proportion of hospital deaths in 2017 (32.1%) was found in the East South Central region.
- New England had the lowest percentage of home deaths in the nation in 2017 (27.2%) and exhibited the smallest reduction in percentage of hospital deaths from 2003 to 2017 (5.6%).
- Deaths in a hospice facility ranged from a high of 11.9% in the South At-

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NEWSLINE

Surgeons, Palliative Care Experts Call for 'Do-Not-Operate' Option in Medical Orders

Portable medical orders such as POLST (physician orders for life-sustaining treatment), which direct emergency care for patients with life-limiting illness, often include DNR (do-not-resuscitate) and DNI (do-not-intubate) orders. A team of surgeons and palliative care experts from Massachusetts General Hospital in Boston suggests the addition of a DNO (do-not-operate) section.

Adding DNO would document the wishes of patients regarding invasive interventions at the end of life more completely, "with the goal of reducing suffering from non-beneficial surgical interventions in patients with severe illness at the end of life," write the authors of a paper published in the *Journal of Palliative Medicine*.

"Patients with life-limiting illnesses should be provided with an opportunity to comprehensively explore end-of-life issues, with clear documentation of DNR, DNI, and DNO orders, which are distinct from advance directives (ADs) or living wills."

Current POLST forms, known in Massachusetts as MOLST (medical orders for life-sustaining treatment), exist in some form in most states and the District of Columbia. Unlike ADs, which

are more comprehensive guidelines for preferred future care if incapacitated, POLST and MOLST are orders specific to medical emergencies, are signed by a medical professional, and must be followed by emergency medical technicians and ER clinicians.

"Unfortunately, the need for operative intervention often arises emergently when patients may not be lucid or family members are either unavailable or unsure as to how to proceed," write the authors. Only 4% of patients enter into a surgical procedure with DNR orders already explored and documented, they note. "Improved communication and a mechanism for documentation of DNR, DNI, and DNO orders are key."

Discussions of benefits and risks may be routine for consideration of interventions in elective or subacute settings, note the authors, but can be challenging in the setting of a surgical intervention that arises emergently. "Introduction of a DNO order simply identifies patients in whom surgical intervention is not desired," they point out.

"Optimal patient care comes from good communication and setting expectations," write the authors. In the article, they include a framework for patient-centered discussions physicians should conduct prior to signing a patient's completed POLST/MOLST form.

DISCUSSIONS OF DNR, DNI, AND DNO SHOULD COVER:

- The underlying disease process and progression
- Anticipated acute medical problems
- Prognosis
- Patient's overall preferences, goals, and values

"Identifying patients' goals and values can guide decision making by outlining principles and central wishes in a patient's care," assert the authors. Examples of a patient's key wishes could include: prioritizing time with family, minimizing pain, having the ability to eat and drink, living with good quality of life for as long as possible, and dying peacefully.

DNO is not a perfect concept, note the authors. Nor is DNR, since the definitions of "resuscitation" and "operation" can be wide-ranging and ambivalent. But such limitations are "outweighed by the ability to engage patients in a conversation about wishes and goals, and ultimately to identify patients with clear-cut wishes to avoid interventions."

Source: "DNR, DNI, and DNO?" *Journal of Palliative Medicine*; Epub ahead of print, November 2019; DOI: 10.1089/jpm.2019.0486. Cauley CE, El-Jawahri AR, Jacobsen JC, Udelsman BV, Jackson VA, Temel JS, Qadan M; Department of Surgery and Department of Medicine, Massachusetts General Hospital, Boston.

New Trend (from Page 2)

Atlantic region in 2017 to a low of just 2% in the Pacific region.

"When I talk to my patients about what's most important to them as they begin to reach the end of life, so many of them tell me they want to spend their last moments surrounded by the familiarity of home," says Warraich. "Understanding where patients die can help us determine how we can deliver care to them and what services they'll require in those settings."

Sources: "Changes in the Place of Death in the United States," *New England Journal of Medicine*; December 12, 2019; 381(24):2369–2370. Cross SH and Warraich HJ; Duke University Sanford School of Public Policy, Durham, North Carolina; Veterans Affairs Boston Healthcare System, Boston. "Trends in Place of Death for Individuals with Cardiovascular Disease in the United States," *Journal of the American College of Cardiology*; October 15, 2019; 74(15):1943–1946. Cross SH, Warraich HF, et al; Sanford School of Public Policy, Duke University, Durham, North Carolina; Division of Cardiovascular Medicine, Department of Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston; and Cardiology Section, Department of Medicine, Boston Veterans Affairs Healthcare System, Boston.

RESEARCH MONITOR

More Than 15% of ICU Admissions May Be Preventable, National Study Finds

Earlier palliative care, not more ICU beds, could improve care, lower costs

About one in six admissions to an intensive care unit (ICU) across the U.S. from 2006 to 2015 were for conditions that might have been treated earlier by community-based preventive or palliative care services, a large study has found. Further, geographic variation in the rates of ICU stays appears to be linked to the availability of ICU beds, according to a report published in the *Annals of the American Thoracic Society*.

“This study was motivated by my experiences caring for patients in the medical ICU who required maximal life support because, a few weeks or months before, they couldn’t afford basic preventive medical services,” says lead author Gary E. Weissman, MD, MSHP, of the Palliative and Advanced Illness Research Center at the University of Pennsylvania, Philadelphia.

As the nation’s population ages, there is a push to meet the expected demand for more ICU services for older adults with complex medical issues by increasing the number of ICU beds and workforce, note the authors. The needs of these patients might be better met by investing instead in strengthening preventive and palliative services.

“An appreciable proportion of U.S. ICU admissions may be preventable with community-based interventions,” write the authors. “Investment in the outpatient infrastructure required to prevent these ICU admissions should be considered as a complementary, if not alternative, strategy to expanding ICU capacity to meet future demand.”

Estimated costs for hospitalizations with ICU stays far exceed those for outpatient preventive services, the authors point out. “Early palliative care in patients with serious illness may reduce ICU admissions

and costs, while simultaneously improving patient- and family-centered outcomes.”

Investigators analyzed data from 2006 to 2015 on 16.6 million ICU admissions (including coronary care unit admissions) from among 99.8 million acute inpatient hospitalizations of patients aged ≥ 65 years (mean age, 79 years), using datasets from Medicare fee-for-service, Medicare Advantage, and a large national private insurer. These datasets represent about 13% of the entire U.S. population and about 64% of individuals aged ≥ 65 years, the authors note.

Because no “gold standard” definition of a potentially preventable ICU admission has yet been established, the researchers identified two patient groups whose care might potentially be handled better outside the ICU.

TYPES OF PREVENTABLE ADMISSIONS

1 – Ambulatory care sensitive condition (ACSC) admission, defined as a hospitalization and ICU admission of a patient with a chronic or medical condition for which ICU care may have been avoided with timely and appropriate outpatient care.

Example conditions include hypertension, urinary tract infection, and uncontrolled diabetes.

2 – Life-limiting malignancy (LLM) admission, an ICU admission of a cancer patient with a life expectancy of a year or less, for whom palliative care would have been appropriate earlier, and for whom hospice/palliative care might now be considered.

Life-limiting admissions may also be preventable for other serious illnesses with prognoses similar to that of cancer, such as chronic lung disease, heart failure, and neurodegenerative disorders.

OVERALL

- Among all hospitalizations with ICU care, 15.5% were associated with a potentially preventable diagnosis.
- 6.3% of all ICU admissions were among LLM patients.

TRENDS AND VARIATIONS

- There was a nearly eight-fold difference among U.S. states in the rates of ICU admissions, with significant correlations between all potentially preventable ICU admissions and the total number of available ICU beds in each state.
- Over the ten-year study period, the percentage of ICU hospitalizations in the ACSC group slowly declined, while the percentage of ICU stays for the LLM group increased.
- The proportions of ICU care among ACSC patients increased with older age, while declining with greater age for those with a LLM.

“Our results suggest that expansion of ICU bed supply in the U.S. contributes to the total number of potentially preventable ICU admissions,” write the authors. They suggest that future research focus on analysis of trends in ICU hospitalization broken down by individual category of ACSCs, to inform targeting of particular outpatient services aimed at avoiding ICU admission.

Source: “Potentially Preventable Intensive Care Unit Admissions in the United States, 2006–2015,” Annals of the American Thoracic Society; January 2020; 17(1):81–88. Weissman GE et al; University of Pennsylvania Perelman School of Medicine; Pulmonary, Allergy, and Critical Care Division and Leonard Davis Institute of Health Economics; and Palliative and Advanced Illness Research Center, both in Philadelphia; University of Illinois at Chicago, Chicago; and Corporal Michael J Crescenz VA Medical Center, Philadelphia.

RESEARCH MONITOR

Middle-Aged Americans Pursue Uninformed Dementia Prevention, Rarely Consult Their Physicians

Focus needed on early management of lifestyle and chronic conditions

While nearly half of surveyed middle-aged Americans considered themselves at least somewhat likely to develop dementia as they aged, only 5.2% had discussed evidence-based prevention strategies with their physicians, while about 40% endorsed the use of marketed preventive measures that have no proven efficacy, according to a report published in *JAMA Neurology*.

Further, individuals whose race/ethnicity or health status puts them at higher risk for development of dementia unrealistically perceived themselves as having lower risk than their counterparts.

“Given repeated failures of disease-preventing or disease-modifying treatments for dementia, interest in treatment and prevention have shifted earlier in the disease process,” write the authors. “Adults in middle age may not accurately estimate their risk of developing dementia,” and could thus be wasting their efforts and money on ineffective measures rather than consulting their clinicians regarding evidence-based health strategies.

The authors suggest that physicians explore making opportunities to counsel middle-aged patients on evidence-based steps they can take to help preserve brain function as they age, such as increasing physical activity, ceasing smoking, and controlling medical conditions such as diabetes and hypertension.

Investigators analyzed results of a nationally representative poll, the University of Michigan’s National Poll on Healthy Aging, of 1019 adults aged 50 to 64 years in 2018. Respondents were asked how likely they were to develop dementia in their lifetime, whether they had discussed prevention with their physicians, and which of four specific strategies they used to maintain brain health.

KEY FINDINGS

- Overall, 48.5% (95% CI, 45.3% to 51.7%) of middle-aged adults considered themselves at least somewhat at risk for developing dementia, with 44.3% (95% CI, 41.1% to 47.5%) responding “somewhat” and 4.2% (95% CI, 3.1% to 5.8%) considering dementia “very likely.”
- Only 5.2% (95% CI, 4.0% to 6.8%) of respondents had discussed dementia prevention with their physicians.
- Discussion with a physician was more common among those with a perceived higher likelihood of developing dementia (7.1%; 95% CI, 5.1% to 9.8%) than among those who perceived their likelihood as being lower (3.6%; 95% CI, 2.2% to 5.7%).
- About one-third of respondents endorsed the use of marketed products for dementia prevention, with 31.6% (95% CI, 28.7 to 34.6) supporting the use of fish oil and 39.2% (95% CI, 36.1% to 42.4%) claiming to use other vitamins, supplements, or mental activities.

HIGHER-RISK PATIENTS MISPERCEIVE THEIR DEMENTIA LIKELIHOOD

- Non-Hispanic black respondents were significantly less likely to consider themselves at risk for dementia (adjusted odds ratio [AOR], 0.51; 95% CI, 0.32 to 0.81) than were white respondents.
- Respondents who rated their physical health as “fair” or “poor” did not consider themselves at greater risk for dementia than did those who rated their health as “good” (AOR, 1.46; 95% CI, 0.93 to 2.28 and AOR, 1.49; 95% CI, 1.10 to 2.01, respectively) as compared with those with self-reported “very

good” or “excellent” physical health.

- In contrast, those who rated their mental health as “fair” or “poor” felt they were at greater risk for dementia (AOR, 2.30; 95% CI, 1.19 to 4.47) than did those who reported their mental health as “good” (AOR, 1.48; 95% CI, 1.05 to 2.08), with “very good” or “excellent” used as reference.

Non-Hispanic black individuals have a higher prevalence of dementia than do other racial/ethnic groups, point out the authors, yet these individuals perceived their risk as being lower than did respondents in other groups. Similarly, patients with poor or fair physical health did not accurately perceive their higher likelihood of developing dementia compared with those with better health status.

Further, although there is little evidence to suggest that poor mental health is causally linked to dementia development, the largest association with perceived likelihood of dementia was found among those who rated their mental health as fair to poor.

“While managing chronic medical conditions, such as diabetes or cardiovascular disease, could reduce dementia risk, few respondents appear to have discussed this with their physician,” write the authors. “Policy and physicians should emphasize current evidence-based strategies of managing lifestyle and chronic medical conditions to reduce the risk of dementia.”

Source: “Perception of Dementia Risk and Preventive Actions Among U.S. Adults Aged 50 to 64 Years.” JAMA Neurology; Epub ahead of print, November 15, 2019; DOI: 10.1001/jama-neurol.2019.3946. Maust DT et al; Department of Psychiatry; Institute for Healthcare Policy and Innovation; and Department of Internal Medicine, University of Michigan; Center for Clinical Management Research, Veterans Affairs Ann Arbor Healthcare System, all in Ann Arbor, Michigan.

RESEARCH MONITOR

Majority of Blood Cancer Physicians Discuss Prognosis, Often Using General Terms and Not Always Revisiting as Disease Progresses

More than one-half of hematologic oncologists report discussing prognosis with most of their patients, but prefer to impart information using general rather than specific terminology. Further, nearly one in five say they never readdress prognosis after an initial discussion, or do so only when death is imminent, according to a report published in the *Journal of Palliative Medicine*.

“Delays in revisiting prognosis may contribute to discrepancies between physicians’ and patients’ expectations of prognosis, and importantly may compromise patients’ abilities to make informed, preference-aligned treatment decisions as their disease evolves,” write the investigators. “Clear prognostic communication, even when uncertain, is arguably foundational for meaningful goals-of-care conversations.”

Estimating life expectancy for patients with blood cancer remains challenging, note the authors, yet research has shown that most cancer patients and their families expect their oncologists to initiate such discussions and to provide detailed information regarding prognosis. Evidence also shows that, despite oncologists’ possible worry about causing emotional distress, these discussions are unlikely to cause depression, hopelessness, or damage to the physician-patient relationship.

Investigators analyzed survey responses of 349 U.S. hematologic oncologists (male, 75.4%; median age, 52 years) treating adult patients in 2015. Respondents were queried regarding their approaches to prognostic discussions in terms of timing, frequency, and language preference.

KEY FINDINGS

- 60.3% of respondents reported conducting prognostic discussions with “most”

(> 95%) of their patients.

- 91.3% reported that they typically address prognosis at diagnosis.
- 17.7% said they never revisit the topic of prognosis after the initial discussion or they wait until death is imminent.
- 56.8% preferred using general or qualitative terms rather than specific or numeric terms in these discussions.
- 58.2% considered prognostic uncertainty to be (sometimes, often, or always) a barrier to quality end-of-life (EOL) care.

PHYSICIAN FACTORS LINKED TO LOW LIKELIHOOD OF PROGNOSIS DISCUSSION

- Respondents with ≤ 15 years of post-graduate medical experience had significantly lower odds of discussing prognosis with “most” of their patients (adjusted odds ratio [AOR], 0.51; 95% confidence interval [CI], 0.30 to 0.88) than did those with more years of experience.
- Those who considered prognostic uncertainty to be a barrier to quality EOL care were significantly less likely to hold a prognosis discussion (AOR, 0.57; 95% CI, 0.35 to 0.90) than were those who perceived no barrier in prognostic uncertainty.
- Female hematologic oncologists were significantly more likely than males to readdress prognosis earlier than when death was imminent (AOR, 2.42; 95% CI, 1.09 to 5.39).
- Those who reported having discussions with “most” patients were more likely than respondents who talked to fewer patients to readdress prognosis before death was imminent (AOR, 2.01; 95% CI, 1.12 to 3.59).

WHEN DO HEMATOLOGIC ONCOLOGISTS SAY THEY READDRESS PROGNOSIS?

- During an acute illness (53.0%)
- During a period of stability (29.3%)
- Only when death is clearly imminent (15.6%)
- Never (2.1%)

WHY READDRESSING PROGNOSIS IS IMPORTANT

- The emotional stress experienced by patients at diagnosis may interfere with prognosis information absorption.
- Patients and families have a desire to be informed about prognosis, but their information preferences may change over time.
- Readdressing prognosis at disease progression, relapse, or refractory disease allows for a review of patients’ goals of care and end-of-life preferences.

“This [review of care preferences] is particularly important given that patients with hematologic malignancies are more likely to be hospitalized and to receive chemotherapy in the last 30 days of life, and are also less likely to enroll in hospice compared with solid tumor patients,” point out the authors.

Source: “How Do Blood Cancer Doctors Discuss Prognosis? Findings from a National Survey of Hematologic Oncologists,” Journal of Palliative Medicine; June 2019; 22(6):677–684. Habib AR, Cronin AM, Earle CC, Tulsy JA, Mack JW, Abel GA, Odejide OO; Division of Population Sciences, Department of Medical Oncology, Dana-Farber Cancer Institute, Boston; Harvard Medical School, Boston; Ontario Institute for Cancer Research, Toronto; Department of Psychosocial Oncology and Palliative Care, Dana-Farber Cancer Institute, Boston; Division of Palliative Medicine, Department of Medicine, Brigham and Women’s Hospital, Boston.

CLINICIAN RESOURCES

Risk Model Including Functional Impairments Predicts Six-Month Post-AMI Mortality for Older Adults

A newly developed risk model for six-month mortality in older adults following hospitalization for acute myocardial infarction (AMI) has been shown to be well calibrated and have good discriminatory ability, particularly with the novel inclusion of information on functional impairments, according to a report published in the *Annals of Internal Medicine*.

“We found that several factors relevant to older adults and not considered in prior AMI risk models were independently associated with mortality,” write the authors. “Adding functional impairments significantly improved model performance.”

Current AMI mortality risk models were derived from cohorts of younger adults, note the authors, yet those aged ≥ 75 years — who comprise one-third of AMI hospitalizations — are at higher risk for six-month mortality following hospitalization.

Having prognostic information at discharge can assist patients with decision making and help clinicians identify patients who may benefit from closer post-discharge monitoring, the involvement of palliative care, or referral to hospice.

Investigators developed and assessed the utility of their six-month mortality risk model using data on 3006 patients aged ≥ 75 years (mean age, 81.5 years; female, 44.4%; nonwhite, 10.5%) discharged alive from 2013 to 2016 following hospitalization for AMI in 94 hospitals across the U.S.

The final model included 15 variables. In addition to traditional cardiovascular and demographic risk factors, four variables (hearing impairment, mobility impairment, weight loss, and lower patient-reported health status) not previously included in risk models were added.

FACTORS MOST STRONGLY ASSOCIATED WITH INCREASED MORTALITY RISK

- Unintentional weight loss (OR, 1.69; 95% CI, 1.19 to 2.39)
- Worse self-reported health status (OR, 1.34 per level of worsening; 95% CI, 1.11 to 1.61)
- Older age (odds ratio [OR], 1.06 per year; 95% CI, 1.02 to 1.11)
- Longer length of hospital stay (OR, 1.05 per day; 95% CI, 1.02 to 1.08)

Although the functional impairments contained in their model are not typically assessed in routine inpatient care, “the assessments required for our model should take less than 10 minutes to complete,” write the authors. The results of their multivariable risk model have been used to develop an online calculator tool for six-month mortality. It is available at www.silverscore.org.

Source: “Predicting 6-Month Mortality for Older Adults Hospitalized with Acute Myocardial Infarction: A Cohort Study,” *Annals of Internal Medicine*; Epub ahead of print, December 10, 2019; DOI: 10.7326/M19-0974. Dodson JA, Haiduk AM, Krumholz HM, Chaudhry SI, et al; New York University School of Medicine, New York City; Yale School of Medicine, Yale New Haven Hospital, and Yale School of Public Health, New Haven, Connecticut.

End-of-Life Care Websites

American Academy of Hospice and Palliative Medicine
www.aahpm.org

Information and Support for End-of-Life Care from the National Hospice and Palliative Care Organization
www.nhpco.org/patients-and-caregivers/

Center to Advance Palliative Care
www.capc.org

The EPEC Project (Education in Palliative and End-of-Life Care)
www.bioethics.northwestern.edu/programs/epec/about/

Palliative Care Fast Facts and Concepts, a clinician resource from the Palliative Care Network of Wisconsin
www.mypcnow.org/fast-facts

Hospice and Palliative Nurses Association
www.advancingexpertcare.org

Hospice Foundation of America
www.hospicefoundation.org

Medical College of Wisconsin Palliative Care Program
www.mcw.edu/departments/palliative-care-program

National Hospice & Palliative Care Organization
www.nhpco.org

Division of Palliative Care Mount Sinai Health System
www.stoppain.org

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End-of-Life Care Meetings for Clinicians

Annual Assembly of the American Academy of Hospice and Palliative Medicine. March 18-21, 2020, and **1st State of the Science in Hospice and Palliative Care Symposium.** March 20-22, 2020, both held at the Grand Hyatt San Diego, San Diego, CA. Accredited by the Accreditation Council for Continuing Medical Education. Website: <http://aaahpm.org/education/meetings/>

National Hospice and Palliative Care Organization 2020 Leadership & Advocacy Conference. March 25-27, 2020, Gaylord National Resort and Convention Center, National Harbor, MD. Phone: 877-491-0468. Website: www.nhpco.org/lac2020

American Geriatrics Society 2020 Annual Scientific Meeting. May 7-9, 2020, Long Beach, CA. Website: www.americangeriatrics.org

Topics in Emergency Medicine, Pain Management, and Palliative Care. April 18-25, 2020, 7-Night Hawaii cruise conference, round-trip from Honolulu, Oahu, Hawaii. Accredited by the Accreditation Council for Continuing Medical Education. Phone: 800-422-0711; Website: www.continuingeducation.net

Palliative Medicine and End-of-Life Care, Including Related Topics in Neurology. June 20-18, 2020, 8-Night Spain and Portugal cruise conference, round-trip from Southampton (London), England. Accredited by the Accreditation Council for Continuing Medical Education. Phone: 800-422-0711; Website: www.continuingeducation.net

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