Men have an increased mortality risk following a hip fracture even when controlled for age, comorbidities, and number of medications used.

**Background:** The factors responsible for poor outcomes following a hip fracture are not well understood.

**Objective:** To assess mortality following a hip fracture and to identify the etiological factors responsible for the increased risk of dying following a hip fracture.

**Design:** Descriptive cohort study.

**Participants:** 42,076 patients (73% females, 27% males) from the National Hospital Discharge Register in Denmark. This registry maintains complete records of all hospitalizations and all outpatient appointments linked to civil registry numbers in the country.

**Methods:** The authors were able to include data up to 3 years of post-fracture mortality observations for all patients. Data on prescriptions dispensed from Danish pharmacies were collected from the Danish National Prescription Database. The primary outcome was all-cause mortality.

**Results:** The authors found that the average age (SD) was 78.1 years (± 8.9 years) in the men and 81.7 years (± 10.0 years) in the females. Compared to the general population, males had an increased mortality of 37% and females 26%. The cumulative mortality after 3 months was 15.3% in the males increasing to 46.0% at 3-year follow-up. Cumulative mortality for the males was 23.9% after 3 months and 57.0% after 3 years ($P < 0.001$). Therefore, mortality within this timeframe of 3 years was higher in the males. For both men and women, the risk of death in the first year following a hip fracture increased significantly (analyzed by logistic regression) with increasing age (HR for females 1.06; males 1.07), number of medications (females 1.04; males 1.06), and presence of several comorbidities. The excess mortality for men compared with women remained strongly significant (HR, 1.7) when controlled for age, number of medications, and chronic comorbidities.

**Conclusions:** Male gender is an independent risk factor associated with increased risk following a hip fracture in the elderly.

**Reviewer's Comments:** The reason why male gender is an independent risk factor is unclear. The authors found that the greatest mortality difference was found in the first few weeks. This suggests that acute factors associated with the fracture may play a role, such as perioperative factors that are yet not well defined. (Reviewer-Norman G. Egger, MD).

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Keywords: Elderly, Gender, Hip Fracture, Comorbidity

Print Tag: Refer to original journal article
Older adults have an increased risk for all-cause mortality after a hip fracture compared to sex- and age-matched control groups without a hip fracture.

**Background:** There is an increased mortality risk after a hip fracture but it is unclear what the longer term trend is.

**Objective:** To evaluate the extent and trend of mortality following a hip fracture in the elderly.

**Design:** Meta-analysis of previously published prospective cohort studies as of mid-2009.

**Participants:** Men and women aged >50 years who suffered a hip fracture.

**Methods:** 2 independent reviewers abstracted and evaluated prospective cohort studies that evaluated mortality from the time of the hip fracture onward. The authors excluded articles that did not report on all-cause mortality, when the follow-up was <1 year, or if there was no control group. They performed life-table analyses and constructed survival curves and compared with age- and sex-matched control groups. They calculated the relative hazard as the relative risk for death following a hip fracture compared with a control group either over the total follow-up or during a specific interval following the injury.

**Results:** The overall quality of most studies was good but there was a big variation in the selection of control populations, the duration of the observation period, and adjustment for comorbid conditions. The relative hazard for short-term death (within the first 3 months following a hip fracture) was 5.75 times higher in women (95% CI, 4.94 to 6.67), and in men, 7.95 times higher compared to the control group (95% CI, 6.13 to 10.3). This risk for mortality decreased significantly over time but never returned to the level found in age- and sex-matched control groups. The absolute risk for death using life-table analyses demonstrated that a white woman in the U.S. sustaining a hip fracture at age 80 years had an excess annual mortality of 8% up to 22% between 1 and 10 years following the injury. For white men in the U.S., the numbers were 18% for 1 year going up to 20% after 10 years. After 5 years following a hip fracture, and in particular in the oldest old age group, the gender-related differences in excess mortality started to decrease.

**Conclusions:** Older adults have an increased risk for all-cause mortality after a hip fracture compared to sex- and age-matched control groups without a hip fracture. At any age, the increased annual mortality following a hip fracture was higher in men than in women.

**Reviewer's Comments:** The study adds important epidemiological evidence of a persistent increased mortality for many years following a hip fracture and emphasizing that this excess mortality is higher in men compared to women. The causes of this increased mortality and the gender differences remain unclear. Some caution should be taken to interpret these results since these were modeled for the white population of the United States. (Reviewer-Norman G. Egger, MD).

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Keywords: Elderly, Cohort Study, Hip Fracture, Mortality, Meta-Analysis

Print Tag: Refer to original journal article
The risk of new ischemic lesions on brain MRI is higher in patients who receive percutaneous stenting than endarterectomy. Protection devices do not change this risk.

**Background:** Internal carotid stenosis is a condition that can increase risk of stroke. It can be treated with endarterectomy or percutaneous stenting. The International Carotid Stenting Study (ICSS) recently published results of a randomized controlled trial. The results demonstrate an increased risk of non-disabling stroke in patients treated with percutaneous stenting as compared to endarterectomy. There was no difference in incidence of disabling strokes. It is possible that this increased risk may be due to bias due to lack of masking of treatment allocation in the clinical follow-up period. The authors used MRI as an additional outcome measure.

**Objective:** To compare the risk of procedural ischemia and persistent infarction on MRI between patients receiving percutaneous stenting or endarterectomy, as well as to study the effect of cerebral protection devices on risk of ischemia with stenting.

**Design:** Prospective randomized controlled trial.

**Methods:** This study is part of a larger multicenter study (ICSS). Patients with symptomatic and at least moderate carotid stenosis were invited to participate. They were randomly assigned to stenting or endarterectomy. Some sites that had neuroimaging facilities were invited to participate in ICSS-MRI. Of the 50 sites, 7 took part in ICSS-MRI. Participants received a scan prior to treatment, and 2 scans post-treatment.

**Results:** 231 patients had MRI before and after treatment; of these, 124 were in the stenting and 107 in the endarterectomy group. Seven centers participated in the study; of these, 5 had a policy to use cerebral protection devices. Half of the patients who received stenting had new lesions on MRI scans as compared to 17% in the endarterectomy group (OR, 5.21; 95% CI, 2.78 to 9.79). The risk of lesions on MRI post-treatment remained higher with stenting, even in centers that used a protection device. The results were similar on images 1 month after the procedure.

**Conclusions:** The risk of new ischemic lesions on brain MRI is higher in patients who receive percutaneous stenting than endarterectomy. Protection devices do not change this risk.

**Reviewer's Comments:** Stroke may be an unfortunate outcome of untreated carotid stenosis in the elderly. This study adds to our knowledge that percutaneous stenting may have adverse outcomes that patients need to be aware of. Interestingly, analysis by age favors endarterectomy for people aged >70 years. (Reviewer-Ariba Khan, MD).

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Keywords: Stroke, Ischemia, Infarction, MRI, Percutaneous Stenting, Endarterectomy

Print Tag: Refer to original journal article
Admission to higher-volume hospitals was associated with a reduction in mortality for acute MI, heart failure, and pneumonia, although there was a volume threshold above which an increased condition-specific hospital volume was no longer significantly associated with reduced mortality.

**Background:** Hospitals have differing sizes and areas of expertise. Older persons make up an important population of both large and small hospitals.

**Objective:** To determine the relationship between hospital size and mortality.

**Design/Methods:** This was a cross-sectional analysis of Medicare data claims for patients aged ≥65 years who were hospitalized between January 1, 2004, and December 31, 2006, with a principal diagnosis of acute myocardial infarction (MI), heart failure, or pneumonia. Patients were included if they were in the Medicare fee-for-service program and had been enrolled in the program for the prior 12 months. Data were extracted from the Medicare billing files to determine the patients' coexisting conditions, medical history, and use of procedures in the 12 months prior to hospitalization. Death from any cause at 30 days after hospital discharge was determined by linking the Medicare billing database to the Medicare enrollment database. Statistical analysis was performed to determine outcomes across the categories of hospital volume.

**Results:** When reviewing the characteristics of the patients according to the medical condition, the average patient age was 79 years. There was a good distribution of older Medicare patients in the small volume (2067), medium volume (1029), and large volume (1032) hospitals. The volume alone did not determine the outcome of care in the hospitals. Many seniors who received care in low-volume hospitals had excellent outcomes, whereas many others who received care in high-volume hospitals had poor outcomes. There was heterogeneity in the 30-day death rate among hospitals with small, medium, and large volumes of cases for all 3 conditions. There was also an association between condition-specific hospital volume and 30-day mortality for patients with acute MI, heart failure, and pneumonia. Once the hospital volume reached 100 cases per year for a specific condition, there was no longer a continued decrease in the mortality rate.

**Conclusions:** Seniors who required a medical hospitalization for any of 3 common conditions had a lower rate of death if they were admitted to a hospital that handled a large volume of patients with that condition every year.

**Reviewer's Comments:** This article brings into focus the issue of regionalizing care for older adults with common medical conditions. Policy makers need to take into account the need to avoid a disruption in the care of older patients in making such decisions. Further, the study calls into question the need to standardize care between large- and small-volume hospitals. (Reviewer-Michael L. Malone, MD).

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Keywords: Hospital Volume, Heart Failure, Pneumonia, Acute Myocardial Infarction, 30-Day Mortality

Print Tag: Refer to original journal article
Is There a Link Between Race and Nonoperative Management of Hip Fracture?

Nonoperative Care for Hip Fracture in the Elderly: The Influence of Race, Income, and Comorbidities.
Neuman MD, Fleisher LA, et al:
Med Care 2010; 48 (April): 314-320

In this study, black race was a particular factor in predicting the use of nonoperative management of Medicare beneficiaries with a hip fracture.

**Background:** The standard approach to the assessment and management of older adults with a hip fracture is to direct the patient to the emergency department to obtain an immediate anteroposterior radiograph view of the pelvis and a lateral view of the groin. The older patient is prepared for surgery with early medical clearance. Delaying surgery >24 hours increases the mortality and morbidity for the patient. There are occasions where the patient and family wish that no surgery take place. Nonoperative management of an older person with a hip fracture is indicated when the patient presents late with a fracture that has begun to heal, when there is a lack of any prospect for functional recovery, when the patient needs end-of-life care, and when the patient refuses surgery. Prior research has noted that about 4% to 8% of those with hip fracture received no surgical intervention.

**Objective:** To describe the rate of nonoperative management of first-time hip fracture among a large population of Medicare beneficiaries and to define associations between nonoperative care among those with differing race and income.

**Design/Methods:** This was a retrospective cohort study of Medicare beneficiaries from New York, Texas, and Illinois with first-time hip fractures. The study period was from 2002 through 2006 and included 165,861 patients with first-time hip fractures. ICD-9 billing codes were used to identify patients who underwent a procedure to care for their hip fracture. In total, 94% of patients received a procedure for their hip fracture and 6% received nonoperative care.

**Results:** Nonoperative patients were older than those who received surgery. They were more likely to be male and had more comorbidities. They were also more likely to have been admitted from a skilled nursing facility. Importantly, the mortality rate at 7 and 30 days after admission was higher among those who received nonoperative care. When multiple parameters were assessed using logistic regression models, black race was associated with a 79% increase in odds of nonoperative management when compared to white race. Income was not associated with an increased rate of nonoperative management.

**Conclusions:** Black race was a particular factor in predicting the use of nonoperative management of Medicare beneficiaries with a hip fracture.

**Reviewer’s Comments:** Seniors who are hospitalized for hip fracture may be receiving differing plans for their care, based on their race. This study may not take into account the patient and family preferences for care. The study reflects an inequitable process of selection for operative repair in black compared to white patients. (Reviewer-Michael L. Malone, MD).

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Keywords: Hip Fracture, Nonoperative Management, Geriatrics, Disparities, Quality of Care

Print Tag: Refer to original journal article
Increased Burden of COPD Over Time Has Shifted From Men to Women

Effective clinical and public health strategies are needed to prevent COPD and manage the increasing number of people living longer with this disease.

**Background:** Chronic obstructive pulmonary disease (COPD) is a common chronic illness in older adults. Overall, COPD is the fourth leading cause of death among adults aged ≥65 years. The prevalence for adults worldwide is approximately 10%. For the last 2 or 3 decades, there has been a steady increase in age-adjusted office visits, hospitalizations, and mortality for COPD in men and women. Information about trends of COPD, however, has been from only a few studies. Smoking is the most important risk factor for COPD.

**Objective:** To look at the prevalence of COPD and trends in the prevalence over time.

**Design/Methods:** This was a longitudinal cohort study of large databases of health information containing physician claims and hospital admissions on adults aged ≥35 years from Ontario, Canada. The data from the large databases were linked to the Ontario Registered Persons Database, which contains additional information on Ontario residents, including demographic information and the date of death. The time period of the study was from 1991 until 2008. The definition of COPD was noted by ≥1 physician billing claims and/or ≥1 hospital discharge diagnoses with a diagnostic code of COPD.

**Results:** The prevalence of adults with COPD increased by 65% from 1996 to 2007 with data showing the age- and sex-standardized prevalence to increase from 7.8% to 9.5% during that period. Women had twice the increase in age-standardized prevalence compared to men. The increase in sex-standardized prevalence was higher in adults who were aged 50 to 64 years when compared to those adults younger and older. The prevalence rate for seniors in 2007 was 22.2%. The age- and sex-standardized incidence of COPD decreased during the same time period. The age- and sex-standardized all-cause mortality rate decreased from 1996 to 2007.

**Conclusions:** There has been an important increase in the prevalence of COPD in the last decade with trends indicating that the increased burden of this disease over time has shifted from men to women.

**Reviewer's Comments:** This study describes the public health implications of COPD and highlights the importance of strategies needed to manage and prevent this chronic illness. Over time, we will need to develop additional strategies to address the needs of older women with COPD. (Reviewer-Michael L. Malone, MD).

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Keywords: Chronic Obstructive Pulmonary Disease, Trends in Prevalence

Print Tag: Refer to original journal article
Seniors who require a stay in the ICU are at higher risk of death in the subsequent years. The risk is concentrated early after hospital discharge among those who require mechanical ventilation.

**Background:** A recent prospective cohort study of a random sample of 2900 community-dwelling adults aged ≥65 years who were enrolled in a Seattle health maintenance organization provided an initial screen with neuropsychological studies and retesting every 2 years. Researchers studied the cognitive scores of seniors before and after their hospitalization and critical illness. There was a decline in cognitive scores from prior to illness to afterward among those who were admitted to a hospital, and the decline was remarkably greater among those seniors who had a critical illness hospitalization. This research highlighted the growing concern that survivors of the ICU may have ongoing risk for increased morbidity and mortality.

**Objective:** To determine the 3-year outcome and resource use of seniors who survive a stay in the ICU.

**Design/Methods:** This was a matched retrospective cohort study that used Medicare files of seniors from 2002 to 2006. The sample group was composed of a sample of Medicare beneficiaries aged ≥66 years who were discharged alive from their first hospitalization in 2003 during which the patients received intensive care and were not discharged to receive hospice care. The control group was seniors who were hospitalized and survived to discharge, but did not require care in the ICU during the 2003 time period. A second general control group was composed of seniors who had a Medicare claim and were not hospitalized. The patients’ Medicare billing data were collected for each quarter of the subsequent 3 years or until their death.

**Results:** The seniors who had an ICU admission had more comorbidity compared to those who did not have an ICU admission. The 6-month mortality rate of seniors who had received ICU stay was 14.1% compared to 10.9% mortality rate for those who had been in the hospital, but not in the ICU. The 6-month mortality rate for the general controls was 2.7%. Most of the deaths occurred in the first 2 months after the ICU stay.

**Conclusions:** Seniors who require a stay in the ICU are at higher risk of death in the subsequent years.

**Reviewer’s Comments:** There is a wonderful resource available to clinicians at www.icudelirium.org, which describes methods to improve the evaluation and management of seniors receiving care in the critical care unit. (Reviewer-Michael L. Malone, MD).

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Keywords: Intensive Care, Medicare Beneficiaries, 3-Year Outcomes

Print Tag: Refer to original journal article
This new set of dementia quality indicators is feasible, reliable, valid, and can be used to improve primary dementia care.

**Background:** Dementia is under diagnosed and many patients with dementia are not well managed. Previously, many educational programs have been developed and implemented to improve caregivers' knowledge of dementia and its management.  

**Objective:** To develop a complete set of quality indicators for dementia diagnosis and management in primary care settings.  

**Participants:** General practitioners, primary care nurses, and informal caregivers were recruited. There were 8 national dementia experts in the scientific consensus meeting, and 13 general practitioners in the demonstration project.  

**Methods:** This study was conducted at the Memory Clinic of the Radboud University Medical Center in the Netherlands. The design included a postal survey, a stakeholder’s consensus meeting, a scientific expert consensus meeting, and a demonstration project. Mean face validity and feasibility scores and compliance rates using the electronic medical records data were measured.  

**Results:** Most indicators showed moderate or good face validity and feasibility scores. The quality indicator started out with 31 and ended with 23 quality indicators. Overall compliance to the quality indicators was 45.3%. Some of the quality indicators contained innovative quality criteria.  

**Conclusions:** This set of dementia quality indicators is feasible, reliable, valid, and can be used to improve primary dementia care.  

**Reviewer’s Comments:** This interesting study has successfully developed quality indicators for dementia diagnosis and management in primary care. This can be implemented in the United States as part of the initiative of monitoring quality indicators for other medical conditions such as breast cancer screening, osteoporosis, and cholesterol management for diabetic patients. (Reviewer-Soryal A. Soryal, MD).  

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Keywords: Outpatient Dementia Care  

Print Tag: Refer to original journal article
Physicians have a lot more to consider when making decisions for patients who lack decisional capacity than just patient preference.

**Background:** All practicing physicians face the dilemma of patients who are unable to make their own decisions. If patient wishes are unknown, physicians must base their decision on what is best for the patient.

**Objective:** To examine the degree to which physicians report dependence on patient preference when making medical decisions for hospitalized patients lacking decisional capacity.

**Design:** Cross-sectional survey conducted in 3 hospitals—1 academic and 2 community-based hospitals in a single metropolitan area.

**Participants:** 281 physicians who recently cared for hospitalized adults.

**Methods:** A survey addressing physicians' beliefs about ethical principles guiding surrogate decision-making was self-administered.

**Results:** 72% of physicians identified a standard related to patient preference as the most important ethical standard for surrogate decision-making. In total, 81% of physicians who made a surrogate decision reported that patient preference was highly important in decision-making, but only 29% reported that patient preference was the most important factor in the decision. Physicians were significantly more likely to base decisions on patient preference when the patient was in the ICU and less likely when the patient was older. The presence of a living will, prior discussion with the patient, and the physicians' beliefs about ethical guidelines did not significantly predict the physicians' dependence on patient preference.

**Conclusions:** Even though a majority of physicians identified patient preference as the most important general ethical guideline for surrogate decision-making, they relied on a variety of factors when making treatment decisions for a patient lacking decisional capacity.

**Reviewer's Comments:** This interesting study had surprising outcomes. When physicians make decisions for patients lacking decisional capacity, they depend on a variety of factors even when advanced directives and previous discussion with the patient had occurred. It is important to know that the physicians who participated in the study included residents and interns from various hospitals. The study proved that there is a difference between ethical theory and physician's practice and it presents an important question to the medical profession regarding whether the ethical framework for surrogate decision-making should be modified or whether patient preference should weigh more heavily on surrogate decision-making. (Reviewer-Soryal A. Soryal, MD).

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Keywords: Incapacitated Patients, Decision Making, Physician's Views

Print Tag: Refer to original journal article
CEA is the gold standard treatment modality in patients with symptomatic carotid artery stenosis who are suitable for surgery.

**Background:** Treatment of significant carotid artery stenosis by medical or surgical methods has been the mainstay in long-term prevention of stroke. Carotid artery stenting (CAS) has been a subject of great interest. Research in the past decade has compared it to endarterectomy (CEA).

**Objective:** To compare the safety and efficacy of CAS to CEA. Only short-term 30 days post-intervention follow-up results are reported and the long-term safety and efficacy outcomes are still being studied.

**Design:** International multicenter randomized controlled trial.

**Methods:** Patients with recent history of symptomatic carotid artery stenosis of ≥50% were included in the study. Eligible candidates were randomized via phone or fax on 1:1 ratio to receive either CEA or CAS treatment. Except for the patients and the interventionalists, all other investigators and clinicians were blinded to therapy. Patients were examined before randomization and after intervention at 1, 6, and 12 months. Primary outcome measures are to assess for stroke in a 3-year follow-up period, which is in process. Secondary outcome is to study the comparison of morbidity or mortality from either treatment in the first 30 days. Primary end point is procedure-related complication of stroke, death, or myocardial infarction (MI).

**Results:** About 1700 participants were recruited with almost half assigned to each treatment group. Subjects who received stenting had a 3.3% higher rate of procedure-related complication within the first 3 months after randomization. Subjects in the CAS group had 8.5% rate of stroke, death, and MI when compared to 5.2% in the CEA group. The CAS group had fewer but fatal MIs, fewer surgical site hematomas, and no cranial nerve palsies. There were no significant differences in the risk of disability or death in both groups.

**Conclusions:** Carotid endarterectomy is safer than carotid artery stenting and should be the treatment of choice for patient with symptomatic carotid artery stenosis.

**Reviewer's Comments:** Short-term results of this study question the safety and efficacy of carotid artery stenting procedures. Stents may be considered in patients who are unable or unwilling to undergo carotid endarterectomy surgery. (Reviewer-Rakhshi Hydari, MD).

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Keywords: Carotid Artery Stenting, Endarterectomy, Carotid Stenosis

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