

Coexisting medical conditions increase treatment costs

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More than 250,000 hip fractures occur every year in the U.S., often resulting in hospitalization, surgery, nursing-home admission, long-term disability, and/or extended periods of rehabilitation. Independent existing medical conditions (otherwise known as comorbidities) significantly increase the treatment cost and length of hospitalization for older adults who have sustained a hip fracture, according to a new study recently published in the *Journal of Bone and Joint Surgery*.

"The purpose of our investigation was to gain a better understanding of the coexisting [medical conditions](#) that impact the cost of treating patients with hip fractures and how those conditions affect the overall cost and duration of hospitalization," said orthopaedic surgeon Kevin P. Black, MD, one of the study's authors and C. McCollister Evarts Professor and Chair, Orthopaedics and Rehabilitation, Penn State College of Medicine

Specific Study Details

Researchers gathered hospital-discharge information from a 2007 Agency for Healthcare Research and Quality (AHRQ) report which included data from 1,044 hospitals in 40 states. The study involved 32,440 patients, and included information on race, sex, hospitalization cost, length of stay, age, type of hip fracture sustained, and type of surgical hip fracture treatment. Almost 80 percent of patients were age 75 or older, 72.3 percent were female, 87.9 percent were Caucasian, 4.3 percent were Hispanic, and 3.7 percent were black.

Patients most commonly had two or three comorbidities. Only 4.9 percent of patients had no comorbidities. [High blood pressure](#), affecting 67 percent of patients, was by far the most common comorbid condition. Others, listed from more common to less common, included:

- deficiency anemias (disorders caused by a lack of certain nutrients, such as iron or vitamin B12);
- fluid and electrolyte disorders;
- chronic lung diseases;
- uncomplicated diabetes;
- neurological disorders;
- [hypothyroidism](#) (a condition in which the [thyroid gland](#) does not produce enough thyroid hormone); and
- congestive heart failure.

Key Study Findings

Comorbidities significantly raise the cost of hospitalization and length of [hospital](#) stay, according to the study. Hip fracture patients who were very thin or malnourished had the greatest increased costs, followed by those with pulmonary circulatory disorders (disorders of blood flow to and from the lungs). Recent weight loss or malnutrition also had the greatest effect on length of hospitalization, increasing the hospital stay by 2.5 days. Congestive heart failure increased the [hospital stay](#) by 1.1 days, and pulmonary circulation disorders, by 0.9 day. Fluid and electrolyte disorders, paralysis, and conditions contributing to blood clots also lengthened hospitalization significantly.

The study results may have major implications for doctors, hospitals, and payors, according to Dr. Black.

"Current reimbursement to hospitals only considers if a patient is

categorized as having a major comorbidity, a comorbidity, or no comorbidity," said Dr. Black. "Our study demonstrates that specific comorbidities significantly increase costs and length of stay associated with the treatment of hip fractures."

Two major issues deserve further investigation, said Dr. Black.

"First, we need to better understand the total cost of caring for hip-fracture patients. Our study focused only on acute hospitalization, but care typically extends well beyond this, since many patients are discharged to rehabilitation and skilled-nursing facilities," said Dr. Black. "Second, this study did not investigate the quality or outcomes of care. As our population ages, there is reason to believe that the number of hip fractures will increase. Having a better understanding of the comorbidities that affect [hip-fracture](#) patients hopefully will lead to the development of strategies to more effectively care for these [patients](#)."

In an effort to prevent hip fractures, Dr. Black and the American Academy of Orthopaedic Surgeons (AAOS) suggest the following fall-prevention strategies:

- Keep floors clear of clutter.
- Wear low-heeled, rubber-soled shoes.
- Make sure all rooms are well-lit.
- Walk on the grass when the sidewalks are slippery.
- Make sure rugs have skid-proof backs.
- Have grab bars installed on the bathroom walls near the bathtub or shower and toilet.
- Use a nonskid bath mat in the shower or bathtub.
- Make sure the stairs are well-lit and have handrails on both sides.

For more fall-prevention resources, visit orthoinfo.org/falls

Provided by American Academy of Orthopaedic Surgeons

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