

Secondary conditions affect length of hospital stay and charges for HIV patients

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A University of Arkansas researcher and her colleagues have found that secondary conditions and diseases that could become deadly significantly affect how long HIV patients stay in the hospital.

The study, which includes the charged expenses to those [patients](#), will help hospitals and health-care providers understand the complex nature of HIV and develop new strategies for managing care for them.

"Our study will help physicians and policymakers better identify specific patient groups who may be at greater risk for HIV infection and help hospitals better plan resources," said Shengfan Zhang, assistant professor of industrial engineering.

Zhang and colleagues at North Carolina State University used data from the 2006 Nationwide Inpatient Sample to examine two critical health-care quality indicators and determine the impact of selected chronic co-morbid diseases on HIV patients. The sample was provided by the U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality.

"Most research has focused on cost-effectiveness analysis or policy planning with respect to HIV in isolation," Zhang said. "But we know that most HIV patients have co-morbid conditions, and these individuals tend to require additional resources compared to those who have the same primary disease but no additional conditions."

The researchers studied several co-morbid conditions, including hypertension, obesity and diabetes, but focused primarily on mental disorders. Other studies have demonstrated that roughly 50 percent of all HIV patients have at least one type of mental disorder or psychiatric diagnosis, especially drug dependence or substance abuse issues.

In raw numbers, the researchers found, HIV patients were generally younger – an average of 43 years old versus almost 57 for non-HIV patients. More than 70 percent of HIV patients were admitted through the emergency department compared to about 46 percent for non-HIV patients. HIV patients also had a higher mortality rate. Nearly 7 percent died during their hospital stay.

Zhang and her colleagues found that compared to patients with other diseases and conditions, HIV patients had longer hospital stays and greater charges. If no co-morbid condition was present, having HIV increased the length of stay on average by 60 percent and total charges by 76 percent, compared to the general patient population.

For HIV patients, average length of stay was nine days, versus almost five for patients who did not have HIV. Total charges for HIV patients were significantly higher at almost \$47,000 on average, compared to roughly \$26,000 for the general patient population.

Isolating the HIV group, the researchers found no significant difference in length of stay for those patients who also had hypertension and obesity. Length of stay was shorter for patients with diabetes. Compared to HIV patients with no co-morbid conditions, HIV patients with hypertension, diabetes and obesity experienced no significant difference in total charges.

But findings were strikingly different for HIV patients with mental disorders. In contrast to the HIV patient population in general, HIV

patients with mental disorders experienced a 19-percent decrease in length of stay and a 15-percent decrease in total charges, the researchers found. Zhang said this might be attributed to patients being transferred to other care facilities, which could distort actual lengths of stay and charges and might indicate that general hospitals do not have the resources to fully treat HIV patients with mental disorders.

To characterize the role of individual mental disorders, the researchers identified eight conditions found to be most strongly associated with HIV: non-dependent drug abuse; drug dependence; depressive disorder; episodic mood disorder; mental disorders due to other conditions; anxiety and dissociative disorders; alcohol dependence; and schizophrenia. The most important conditions were drug-related [mental disorders](#), mood disorders, depression and anxiety, Zhang said.

"This finding suggests that policymakers must focus on these conditions regarding HIV," she said. "Clinicians should implement an integrated health services delivery approach to better address the severity of these chronic, co-morbid [conditions](#) associated with HIV."

"Characterizing the Impact of Mental Disorders on HIV Patient Length of Stay and Total Charges" was published in *Industrial Engineering News*, a magazine of the Institute of Industrial Engineers. Zhang's co-authors from North Carolina State University were Fay Cobb, professor of information systems, and Julie Simmons, professor of industrial and systems engineering.

Provided by University of Arkansas

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