

# Underprivileged patients not as likely to be referred to specialty hospitals for brain tumors

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African-American, Hispanic, and economically disadvantaged patients with brain tumors are significantly less likely to be referred to high-volume hospitals that specialize in neurosurgery than other patients of similar age, the same gender, and with similar comorbidities, according to new research by Johns Hopkins doctors. The finding, published in the March *Archives of Surgery*, suggests a scenario in direct contrast to recommendations from federal health care agencies encouraging better access and quality of health care for people of all races.

Researchers have long known that patients who receive treatment for specialized procedures at hospitals that perform more of those procedures usually have better outcomes than patients who are treated at lower-volume hospitals. Consequently, in recent years, more patients have been shuttled to these high-volume hospitals than ever before. However, the new study's findings suggest that, for brain tumors, referrals are skewed to favor white, high-income patients.

"We know that more patients with brain tumors are getting treatment at high-volume centers, but what happens to patients from various backgrounds?" says study leader Debraj Mukherjee, M.D., M.P.H., a research fellow and co-director of Johns Hopkins' Neuro-Oncology Surgical Outcomes Laboratory. "Even though more patients are getting specialty treatments for [brain tumors](#), the same isn't true for [minority populations](#)."

The new study linked two databases that provided different information about patients between 1988 and 2005. One database, called the Nationwide Inpatient Sample (NIS), provides discharge information from approximately seven million inpatient hospitalizations annually, including patient and hospital demographics, payer information, diagnoses, and procedures. The other database, known as the Area Resource File (ARF), compiles national statistics from the U.S. Census Bureau and other sources, providing data including the percentage of residents living in poverty.

By linking these two databases together by county, the researchers were able to derive new information about the populations in each database.

This method allowed Mukherjee and his colleagues to identify 76,436 adult patients who received surgery for a brain tumor over the 18-year span. Over the entire study period, only about 33 percent of patients were seen at centers that did at least 50 brain tumor surgeries per year. When the researchers examined figures by year, the proportion of patients getting their surgery at those high-volume centers increased steadily from 24 percent in 1988 to 46 percent in 2005, reflecting an overall increase in patients receiving specialty care over time.

Over the entire study period, Hispanic patients were about 30 percent less likely to be seen at high-volume centers, though there was no significant difference between African-American and white patients. However, when the researchers looked at yearly figures, they found a steady decline over time in the odds that African-American and Hispanic patients would be admitted to high-volume centers. In the last five years of the study, African-Americans were a third less likely to be admitted to these specialty centers, and Hispanics were half as likely as white counterparts.

The researchers found similar disparities among low-income patients,

with those under the poverty line 43 percent less likely to be admitted as those making \$60,000 per year or more.

"In the last ten years, there has been a lot of attention on decreasing disparity and improving access to [health care](#) and quality of health care. Unfortunately, it looks like we're still missing the mark for minority patients. What we've found really goes against the inherent desire to treat every patient equally," says study senior-author Alfredo Quinones-Hinojosa, M.D., associate professor of neurosurgery, oncology, neuroscience and cellular and molecular medicine at the Johns Hopkins University School of Medicine.

The researchers note that it's unclear whether physician referral bias, patient preference, or another reason might be responsible for the trends they found in their study. They plan to launch a prospective study to investigate the reasons for these disparities soon.

"Based on the results we get, physicians can really tailor their policy and the way they do business to make sure patients get the best care they can," says Mukherjee.

**More information:** Arch Surg. 2010;145[3]:247-253, 226-232, 233-238.

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