

## SCIENCE TIMES

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#### On the Cover

This month's cover features a stunning vista in the Caucasus Mountains. This 750 mile long mountain range runs through 6 countries, from Russia down to Iran. The Greater Caucasus (northern range) was built by folding earth from plates colliding, while the Lesser Caucasus was mainly created by volcanic activity. The geographic range of these mountains means that they contain vast ecological diversity, from sub-tropical marshes and highland semideserts, to glaciers and active lava flows. By Ivtorov - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=49302502>.



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Knihovna  
Univerzity Palackého v Olomouci  
Oborová knihovna  
Lékařské fakulty  
Hněvotínská 3 | 775 03 Olomouc

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- National Databases for Neurosurgical Outcomes Research: Options, Strengths, and Limitations**  
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**BACKGROUND:** Quality improvement, and value-based and personalized care depend on robust clinical, financial, and demographic data streams of neurosurgical outcomes. The neurosurgical literature lacks a comprehensive review of large national databases.

**OBJECTIVE:** To assess the strengths and limitations of various resources for outcomes research in neurosurgery.

**METHODS:** A review of the literature was conducted to identify surgical outcomes studies using national data sets. The databases were assessed for the availability of patient demographics and clinical variables, longitudinal follow-up of patients, strengths, and limitations.

**RESULTS:** The number of unique patients within each data set ranged from thousands to hundreds of millions. Some included both clinical and financial data. Outcomes collected included patient-reported outcomes; 30-day morbidity, readmissions, and reoperations; and disease incidence and disease-specific survival. The strengths of large databases included large numbers of rare pathologies and multi-institutional nationally representative sampling; the limitations of these databases included variable data veracity, variable data completeness, and missing disease-specific variables.

**CONCLUSION:** The improvement of existing large national databases and the establishment of new registries will be crucial to the future of neurosurgical outcomes research.

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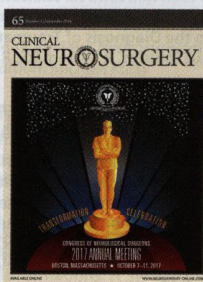
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