

Diagnostic Accuracy Among Neurology Residents: Six-year Data from the Close the Loop Resident Clinical Acumen Assessment Project

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Objective: To evaluate neurology resident diagnostic patterns to identify individual and systemic educational needs.

Background: The Close the Loop Project at Mount Sinai characterizes cases presented by on-call neurology residents, including the accuracy of their initial diagnostic impressions.

Design/Methods: From July 2010 to June 2016 all patients independently assessed by on-call junior residents and presented in daily morning report were captured in a caselog. We recorded basic encounter data and resident's initial diagnostic impression; we "closed the loop" by revisiting each case after reviewing final diagnosis. We categorized initial impression and final diagnosis as neurological or non-neurological. Neurological cases were then localized as CNS/PNS, and further cataloged etiologically. We compared residents' initial impression to the final diagnosis to assess whether the initial impression was accurate, partially accurate, or wrong, and characterized the types of errors made. Two raters evaluated the entries (>95% interrater agreement).

Results: 1301 cases were presented and analyzed for resident accuracy; of these, 920 (70.7%) were ultimately deemed neurological. Of these neurological cases, 775 (84.2%) localized to the CNS; the most common were ischemic stroke (25.8%) and seizure (16.5%). Of the 381 non-neurological cases, 64.0% were medical, 26.0% psychiatric and 2.6% ophthalmological. Residents' overall initial diagnoses were accurate in 64.0% of cases, and wrong in 31.1%. Accuracy was higher for neurological cases (67.5%) than for non-neurological (55.6%). Accuracy was similar between CNS (67.8%) and PNS (65.5%) localizations. Neurological cases were appropriately identified in 94.7%, whereas non-neurological cases were inappropriately deemed neurological in 40.6% of cases.

Conclusions: We present the first analyses of our complete dataset from this educational initiative to assess and improve neurology resident clinical acumen. Residents displayed higher diagnostic accuracy when recognizing neurological disease compared with non-neurological disease, with a tendency to over-diagnose neurological illness. Future analyses will explore subgroups and more specific misdiagnosis patterns.