Validation of Neuroinformatics Algorithms, Claims-Triage Score, and Proprietary Brain Health Protocol for Dementia Care Management for Insurance Markets: Establishing a Gold Standard in the Silver Tsunami

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Background/Introduction

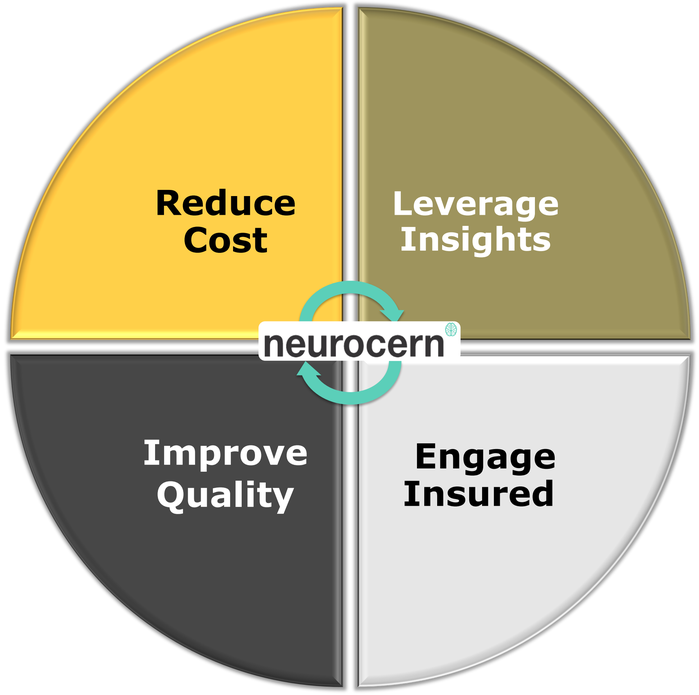
As the population ages globally, there will be an increased demand placed on the private and public insurance sector to improve outcomes and quality of care for patients with neurodegenerative diseases. Established guidelines and standards of care exist and provide a framework for healthcare providers (HCP) to diagnose cognitive impairment (CI) and rule out other conditions that may mimic or exacerbate CI. Based on prior real world evidence, these guidelines are seldom adopted by HCPs and insurance claims processing teams.

Methods

As part of chronic illness insurance claims processing, proprietary neuroinformatics algorithms computed a patent-pending claims triage score (CTS) and a digital brain health protocol (BHP). The CTS consists of a 1-5 score that provides a framework for utilization management and cognitive claims processing for chronic illness verification. An external neurology task force reviewed and validated the CTS and proprietary BHP to confirm they met standards of care and practice guidelines put forth by the American Academy of Neurology. Additional claims data was collected as part of the process.

Figures

Neurocern's Neuroinformatics and Predictive Analytics



Results

A total of 67 CTS and BHPs were completed (F=41, M=26). CTS had a sensitivity and specificity over 95%. Distribution of CTS are as follows: Score 1 (3%), Score 2 (15%), Score 3 (41.7%), Score 4 (25.3%), and Score 5 (7.4%). The external neurology task force agreed with the suggested workup computed by the neuroinformatics algorithms 98% of the time. Inter-rater reliability was high. MMSE scores ranged from 1-30 and SPMSQ scores ranged from 0-10.

Conclusions

Practice guidelines optimize care and improve patient outcomes. No such standardized validated protocol exists for the insurance market to process chronic illness claims and this research highlights a first to market approach that combines predictive analytics and medical guidelines to impact the evaluation of neurodegenerative diseases in the insurance market.

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