

Teleneurology for Stable Epilepsy in Pediatric Long Term Care

Amy C. Stevens, MSN, CPNP^{1,2}

Rebecca Koeniger-Donahue PhD, APRN-BC, WHNP-BC, FAAN²

¹Seven Hills Pediatric Center, Groton, MA, ²Simmons College, Boston, MA

Introduction and Background

Residents of pediatric long-term care benefit from ongoing management of complex health problems to maintain an optimal level of health. Consultations for the care of epilepsy may take place in traditional office settings, or at the nursing home. Costs and benefits are associated with both service delivery models. Patients, families, and clinicians seek ways to use money and time wisely without sacrificing quality. Telemedicine may provide one way to maintain quality of care while containing costs and contributing to patient and family satisfaction. The use of videoconferencing to conduct neurology clinics between a remote neurologist and a nursing home resident, facilitated by an onsite nurse practitioner, provides a third service delivery model for epilepsy consultation.

Method

The *Clinical Value Compass* provides a framework for presenting the results of chart reviews, satisfaction surveys, and interviews that evaluate a teleneurology clinic in a pediatric long term care facility. The *Clinical Value Compass* provides four points corresponding to the directions North, East, South, and West. North corresponds to functional and risk status, including social role and perceived wellbeing. East corresponds to patient and family satisfaction in relation to needs and expectations. South corresponds to direct and indirect costs. West corresponds to a person's biological and clinical status. Value can be assessed through the relationships between compass points: Value = Quality/Costs.

Thirty-two residents of a pediatric long-term care facility participated in chart reviews for function, quality of epilepsy care, and costs associated with that care. Baseline function was operationalized as participation in available programming in the year 2011. Costs of office and on site clinic care were operationalized through billed travel costs, appointment cost per CPT code billed, and staff hourly salary paid in 2011. Clinical quality of 2011 follow up appointments for stable epilepsy was operationalized using an adapted version of the American Academy of Neurology physician performance measurement set for epilepsy. Eleven residents, 8 guardians, and 5 staff members participated in the teleneurology clinic. Satisfaction with teleneurology was measured through satisfaction surveys and semi-structured interviews. Costs of the teleneurology clinic were operationalized as technology costs and staff salary costs. Quality was evaluated with the same audit tool used in the chart review.

Results

Residents participated in 54% to 99% of available programming in 2011. 47% of participants received annual follow up with a neurologist in 2011; for all other clinical quality measures, quality was equivalent across groups. Costs to MassHealth and the nursing home were lowest with on site clinics. Travel to 13 traditional office appointments cost \$1770.18. Teleneurology costs to the nursing home for 11 visits totaled \$1313.59. Guardian and staff satisfaction with teleneurology was high. Interviews reflected positive impressions of teleneurology from guardians, staff, and the neurologist. Participants seen in office settings may have more complex clinical needs than those seen in teleneurology or on site.

Discussion

Teleneurology provided cost savings through elimination of travel costs, and created access to care. Technology costs of teleneurology decrease as numbers of appointments increase. Staff costs of all models are constant, and highest for traditional office appointments. Value for MassHealth is achieved with decreased travel. Function of residents is facilitated by decreased travel time to appointments. Given equivalent quality outcomes and varying cost profiles, participant satisfaction is a crucial variable in determining the value of teleneurology.