Delivered in Outpatient Stroke Rehabilitation Program Leads to Increased Independence with Medications, Self Blood Pressure Monitoring, Improved Blood Pressures, and Rehabilitation Outcomes

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BACKGROUND AND PURPOSE

The Whittier Rehabilitation Hospital Stroke Day Rehabilitation Program is a community-based outpatient program staffed by a neurologist, nurse practitioner, and rehabilitation professionals. Our interdisciplinary program started 2 years ago, sharing resources with other programs within our hospital. It is not research based and operates within the limitations of insurance benefits and staff productivity requirements. We maintain an age-adjusted census of 25 patients representing a broad mix. Advanced rehab and cultural groups from inner-city suburbs, and rural locations are served. These research findings were derived from the referred patients did not adequately understand medications, AHA recommendations for good blood pressure control, and very few were monitoring and recording BPs. BPs measured during Physical Therapy sessions were not well controlled. We developed a quality improvement project with a goal of better understanding and improving these issues.

METHODS

A Unique Medically Based Rehabilitation Model

We designed a Nurse Practitioner led Educational Curriculum utilizing AHA guidelines and AHA Life’s Simple 7 program to improve patient understanding of medications, CV risk factors, and self-monitoring of blood pressures.

• Patients must regularly with the Nurse Practitioner as part of their outpatient rehabilitation program for this education curriculum.

• The Nurse Practitioner additionally interfaces with the rehab team and physicians regarding elevated blood pressure, medication reconciliation, cardiovascular issues, and assists with coordinating community based resources.

• Multidisciplinary services available on site: neurology, nurse practitioner, physical, occupational, speech therapy, physiatry-neuropsychology, psychology, social work, nutrition, prosthetics.

• Individualized treatment plans identify patients’ and caregivers’ goals in functional to “back to life” goals focusing on home, community, and work entry.

• Features an intensive inpatient rehabilitation model incorporating innovative rehab techniques including BWSTT, aquatics, and robotics.

• Patients meet regularly with the Nurse Practitioner as part of their outpatient rehabilitation program.

• Utilizes small group visits in addition to individual therapy to incorporate the peer feedback and reinforcement of the cardiac rehab model.

RESULTS

• 31 consecutive patients from 12/2011 to 7/2013

• 24 women, 7 men

• Age 41 to 90

• 17 ischemic; 14 hemorrhages

• 51 consecutive patients from 12/2011 to 7/2013

• Admit NIHSS Scores: 0-16

• 37 Ischemic Infarcts; 14 Hemorrhages

• Ages: 41 to 90

• AHA Guidelines Nurse Practitioner Cardiovascular Risk Education Program

IMPRESSED REHABILITATION OUTCOMES

• Stroke Impact Scale (SSS) Mood Domain: Scores improved on average of 22% (37%-59%)

• Stroke Impact Scale (SSS) Stroke Recovery Scale Domain: Scores improved an average of 45% (-50% -187%)

• Improved Endurance: 6 Minute Walk: Scores improved an average of 75% (119% -190%)

• Improved Balance: Berg Balance: Scores improved an average of 26% (14% -180%)

IMPACT OF NURSE PRACTITIONER INTERVENTIONS

• NP visits: 1 patient has 145 visits, 1 patient 38 visits (0-217 visits)

• NP visits: Total 480, average 9.6 (range 0-21)

• NP calls to MD regarding BP: 70% (3.8%)

• Increase in Medication Independence: 31% (12/39) of patients dependent on caregiver for medication administration became independent on completion of program.

• Increase in Medication Independence: On admission, 24% (12/50) of patients were independent with meds, 76% (38/50) were dependent. On discharge, 4% (2/50) patients remained independent while 96% (48/50) were dependent

• Increase in Medication Independence-Aphasic patients: 31% (12/39) aphasic patients became independent with medication administration. 95% (37/39) aphasic patients remained dependent on caregiver on admission. 5% (2/37) aphasic patients administered medications independently on discharge.

• Increase in monitoring/monitoring of BPs: On admission, 7% of patients/caregivers were checking and recording BPs, 31% (10/32) were checking and recording BPs during the final 75% of the therapy visits.

• Blood Pressure Improvement: Comparing blood pressures during the first 75% to last 25% of Physical therapy visits, 37% (13/35) remained within mild-norm range. 20% (7/35) had worsening of BP.

• Increase in self blood pressure monitoring: on admission only 10% (3/30) of patients/caregivers were monitoring BPs, 80% were doing so by discharge.

CONCLUSIONS

• Community dwelling stroke patients often cannot translate previously provided medication, CV risk factor, and BP instructions into practical use.

• A novel model of stroke rehabilitative care utilizing small groups and incorporating Nurse Practitioner led education and interventions was designed and implemented as part of an outpatient stroke rehab program. Advanced rehab techniques are also incorporated into our community based rehab program.

• Patients showed readiness to learn and responded positively to Nurse Practitioner led Education directed at medications, CV risk factors, and BP control.

• Nurse Practitioner education and care delivered as part of an outpatient rehabilitation program led to improved knowledge and adherence.

• Blood pressure monitoring and recording

• Blood pressure control

• Independence with medication administration

• Patients also demonstrated improvements in multiple rehab outcomes.

KEYS TO SUCCESS

Nurse Practitioner actively involved in the day to day operation of a community based rehabilitation program.

• Incorporating peer interactions and encouragement within small groups is a powerful motivator.

• Multidisciplinary services coordinated by a team at the rehabilitation site facilitate access for stroke patients to receive optimal care for specific problems in a timely manner.

• Dedicated interdisciplinary team members.

• Hospital wide support for the program.

AHA Guidelines Nurse Practitioner Cardiovascular Risk Education Program