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# Development of Educational Resources and Home Exercise Programs for Neurological Population to Enhance Function Post Discharge

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## BACKGROUND

- According to the Center for Disease Control and Prevention (CDC), an individual experiences a stroke every 40 seconds equaling approximately 795,000 individuals per year[2]
- Stroke is a leading cause of serious long-term disability, impacting an individual's participation in Activities of Daily Living (ADLs)[2]
- Stroke reduces mobility in more than half of survivors age 65 and over[1]
- Research indicates inpatient rehabilitation facilities play a large role in high functional status outcomes in individuals who have experienced a stroke[4]
- Upper extremity hemiparesis and visual deficits are two of the most common impairments post-stroke[3] and are a main focus during occupational therapy intervention
- Home programs are designed to aid in continued recovery and improve function and independence in ADLs

## PROGRAM DETAILS

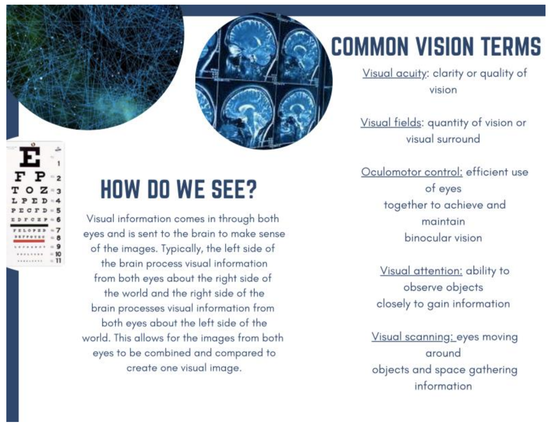
- In order to assist patient's in enhancing their function and increasing independence post discharge, it is important that occupational therapists provide patients with sufficient education and tools to succeed at home
- For the neurological population at an inpatient rehabilitation facility, upper extremity motor deficits and spatial neglect were two of the most common and impactful deficits
- While patients are educated on these deficits and compensatory/remediatory strategies are implemented into treatment sessions, patients often require continued education throughout their rehabilitation secondary to poor carryover and recall of strategies
- In order to improve carryover and increase function post discharge, educational resources and home programs were created for spatial neglect and upper extremity motor recovery.

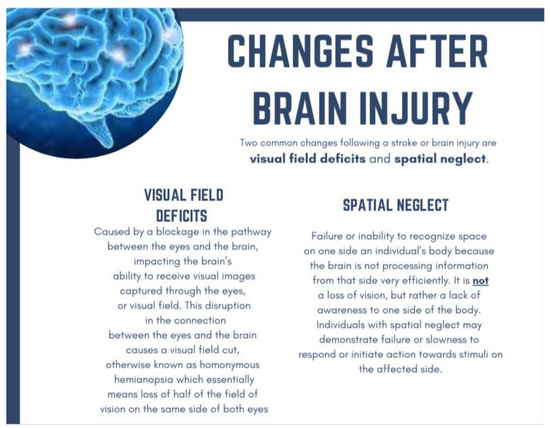
## FOCUSED QUESTION

**Will providing educational resources and home exercise programs for specific neurological deficits impact function and independence post discharge from an inpatient rehabilitation facility?**

## METHODS

- A needs assessment was completed to assess the current need for resources and programs for the neurological population within an inpatient rehabilitation facility
- Once a gap in service was identified, a survey was created and distributed to therapy staff
- The survey consisted of:
  - Questions regarding sufficiency of current educational resources
  - Comfort levels for staff providing education
  - Topics to include in educational resources for upper extremity hemiplegia, visual field deficits and spatial neglect
- Results were analyzed and guided a literature review on current research regarding above topics
- Evidence was interpreted and integrated into the development of spatial neglect and upper extremity motor recovery educational resources and home programs




## RESULTS

Upper Extremity Hemiplegia

- Current educational resources at this inpatient rehabilitation facility for patients and caregivers provided general information on upper extremity motor recovery and hemiparesis
- The resources did not highlight the importance of neuroplasticity and the role it plays in recovery, nor did it provide any information on ways to foster and enhance function.
- Evidence supports Constraint Induced Movement Therapy (CIMT) as an intervention to improve arm function by capitalizing on neuroplasticity and motor learning principles through repetitive exercises using affected limb for 90% of daily activities for 2 weeks[5]
- Traditional CIMT is intensive, difficult to implement and difficult for patients to adhere to schedule, therefore a modified protocol (mCIMT) exists that utilizes a lower treatment dose (i.e. 3hr/day, 3 weeks)
- A mCIMT home program was developed that emphasized the use of affected arm during daily functional tasks (i.e. dressing, grooming, etc.) in conjunction with completing 2-3 tasks additional tasks for a total of 20-30 repetitions per day.


## RESULTS

Visual Field Deficits and Spatial Neglect

- Current educational resources for neurological population did not provide any detailed information on visual deficits or spatial neglect, despite the high prevalence within the patient population
- Visual field deficits and spatial neglect are often thought of to be interchangeable terms despite one being a visual deficit and one being a cognitive deficit
- New educational resources provided definitions of visual field deficits and spatial neglect in layman's terms as well as general information about visual system and the impact of a brain injury
- A literature search was conducted to find evidence on interventions for spatial neglect and visual field deficits to include in home program
- Compensatory strategies include: lighthouse scanning, anchoring, proprioceptive input, visual cues, self reminders

## BOTTOM LINE FOR OT

**Spatial neglect and upper extremity hemiparesis greatly impact an individual's ability to participate in Activities of Daily Living and can continue to create barriers to independence post-inpatient rehabilitation. In order to provide patient's with tools regarding interventions for more complex deficits, it is important for occupational therapists to provide more specialized education and home programs to better serve the patient population. By providing patients the education and tools to aid in their recovery, hopefully patients will experience improved function, participation and independence in ADLs.**

## REFERENCES

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