# Metrics and Outcomes Report

# Navigating the Challenges of Clinical Diagnosis and Management of a Movement Disorder

CME Outfitters Patient Simulation Launch: July 18, 2014 Supported by an educational grant from UCB, Inc.

Designed, Analyzed and Prepared By: CME Outfitters, LLC



## **Table of Contents**

Table of Contents	2
Educational Outcomes and Analysis	3
Methods	3
Top Outcomes Data and Activity Impact	4
Future Educational Needs	5
Conclusions	6

### **Educational Outcomes Analysis**

#### Participants in the medical simulation who treat at least 10 patients per month with Parkinson's disease significantly outperformed their peers across all learning objectives and are 27.4% (effect size 0.40) more likely than controls to provide evidence-based care

This analysis presents educational outcomes data for a neuroscienceCME medical simulation on the diagnosis, assessment and treatment of Parkinson's disease (PD). The target audience for the activity was neurologists, psychiatrists, internists, primary care physicians, physician assistants, nurse practitioners, pharmacists, nurses, and other health care professionals who have an interest in movement disorders.

#### **Learning Objectives**

- Improve recognition and differential diagnosis of the non-motor symptoms of PD by integrating evidence- and measurement-based tools and measures.
- Implement regular assessment of motor and non-motor symptoms in patients with PD utilizing measurement-based tools that are available for the various symptoms of PD.
- Implement treatments into an effective management plan for motor and non-motor symptoms of PD and describe the possible, emerging therapeutic targets for PD that could be employed in the near term care of the patient with PD.

#### Methods

This activity had an immediate posttest, and a three month follow-up outcomes survey that was also administered to a matched control group. Outcomes follow-up survey data were matched for paired analysis with control-group data. No presurvey/pretest was administered to activity participants in order to protect important details about the case that if revealed, may influence decision-making.

Participants (n = 30) and matched controls (n = 30) completed a follow-up survey that utilized a case vignette to assess whether the diagnostic and therapeutic decisions were consistent with clinical data presented in the content of the educational activity. The case vignette was also used to gauge whether practice decisions of participants were different from practice decisions of nonparticipant controls. Physician beliefs surrounding barriers and future educational needs were also collected. Chi-square tests were conducted to identify significant difference between responses of the participant and nonparticipant groups. In addition, overall mean scores and pooled standard deviations were calculated for both groups. These were used to calculate the educational effect size using Cohen's *d* formula.

When comparing those who responded to the posttest with the 30 participants sampled through in the outcomes survey, there was a standard error of difference of 0.92 (p = 0.8142 and t = 0.2351) for the degree which indicates that the follow up participants were an appropriate sample of the entire participant pool. In addition when considering the specialty, there was a standard error of difference of 0.223 (p = 0.3633, t = 0.9101), which also indicates that this is a representative sample of the whole.

#### **Top Outcomes Data and Activity Impact**

Participants in the educational activity who treat at least 10 patients per month with Parkinson's disease significantly outperformed their peers across all learning objectives. Overall, the medical simulation demonstrated an associated effect and participants are 27.4% (effect size 0.40) more likely than controls to provide evidence-based care for patients with Parkinson's disease.

- Level 5 performance change, learning objective 1: Participants are 33.5% more likely than controls to recognize and provide differential diagnoses for non-motor symptoms of PD through the integration of evidence based tools. Effect size (r) = 0.51 (medium)
- Level 5 performance change, learning objective 2: Participants are 26.8% more likely than controls to implement regular assessment of motor and non-motor symptoms utilizing measurement-based tools.
  - Effect size (r) = 0.39 (small-medium)
- Level 5 performance change, learning objective 3: Participants are 40.1% more likely than controls to implement treatments into an effective management plan for motor and non-motor symptoms of PD.
  Effect size (r) = 0.64 (medium-large)

Immediate post-activity knowledge analysis:

- Participants were able to correctly recognize and diagnose the non-motor symptoms of PD by integration of evidence- and measurement-based tools and measures 86.03% of the time with a Standard Error (SE) of 0.23%.
- Participants were able to demonstrate the ability to implement regular assessment of motor and non-motor symptoms in patients with PD utilizing measurement-based tools 97.41% (SE 0.06%) of the time.
- Participants were able to demonstrate the ability to implement treatments into an effective management plan for motor and non-motor symptoms of PD 79.29% (SE 0.33%) of the time.
- Overall attendees were able to demonstrate with 85.61% (SE 0.15%) efficiency the ability to meet the learning objectives of this activity.

Analysis of knowledge retention for surveyed participants (n = 30) seeing at least 10 patients with PD per month:

- 57.14% (SE 4.93%) were still able to demonstrate the ability to recognize and diagnose the non-motor symptoms of PD using evidence- and measurement-based tools and measures.
- 71.43% (SE 2.69%) of participants identified as able to implement regular assessment of motor and non-motor symptoms in patients with PD through the utilization of measurement-based tools.
- 78.57% (SE 2.69%) demonstrated the ability to implement treatments into an effective management plan for motor and non-motor symptoms of PD.
- Overall participants were able to demonstrate knowledge and practice based decisions with 68.57% (SE 2.41%) accuracy indicating approximately 17% drop off from the post assessment.

# Analysis of performance for surveyed participants (n = 30) and matched controls (n = 30)

Of participants who self-report using evidence-based assessment tools at least 50% of the time for their patients with PD, 50.00% (SE 4.88%) were able to recognize the correct areas to measure and tools to use in relation to PD. The matching control group participants were only able to do this with 42.86% (SE 6.04%) frequency. However when looking at clinicians who report treating at least 10 patients per week, the participants were able to do so 71.43% (SE 3.50%) of the time as compared to the control group only 45.83% (SE 4.46%) of the time indicating a strong effect on program attendees.



When considering participants who treat at least 10 patients per month with PD, 71.43% (SE 4.95%) were able to correctly identify that the evidence base supports the use of the Movement

Disorder Society-Unified Parkinson's Disease Rating Scale (MDS-UPDRS) to inform of possible adjustments to treatment plans. In contrast, 56.67% (SE 4.33%) of the control group was also able to do as such. Lastly participants who treat at least 10 patients per week with PD were able to correctly demonstrate 78.57% (SE 2.69%) of the time their ability to implement treatments into an effective management plan for motor and non-motor symptoms of PD as compared to 62.50% (SE 3.38%) from



the control group. Overall, participants who treat at least 10 patients per month outperformed their peers from the control group substantially by being able to correctly demonstrate their knowledge and treatment decisions 68.57% (SE 2.41%) of the time as compared to 56.67% (SE 2.40%) of the time.

### **Future Educational Needs**

For clinicians in the control group who treat at least 10 patients per month, 58.33% (SE 5.21%) believe that more education is required to improve recognition and differential diagnosis of the non-motor symptoms of PD by integration of evidence- and measurement-based tools and measures. Of clinicians who report knowledge as a barrier, only 40.00% (SE 7.35%) utilize evidence-based assessment tools at least 50% of the time.

In addition, 58.33% (SE 5.21%) of the same sample believes that additional education is required to train clinicians to implement regular assessment of motor and non-motor symptoms in patients with PD through the utilization of measurement-based tools. Of the clinicians in the control group who report knowledge as a barrier, only 23.53% (SE 6.06%) implement these evidence-based measurement tools to assess both motor and non-motor symptoms in at least 50% of patients with PD. Lastly, 83.33% (SE 2.30%) of this sample believe that a combination of education and confidence through training is required in order for clinicians to successfully implement treatments into an effective management plan for motor and non-motor symptoms of PD as well as to describe the possible, emerging therapeutic targets for PD that could be employed in the near term care of the patient with PD. Of these clinicians, only 12.50% (SE

5.71%) report using assessment tools to measure symptomatic motor changes in at least 50% of their patients with Parkinson's disease.

#### Conclusions

Clinicians who participated in the CME Outfitters Medical Simulation *Navigating the Challenges of Clinical Diagnosis and Management of a Movement Disorder* and who also treat at least 10 patients with PD per month, significantly outperformed their peers across all learning objectives. These clinicians are 33.5% more likely (effect size 0.51) to recognize and provide differential diagnoses for non-motor symptoms of PD through the integration of evidence- and measurement-based tools and measures. In addition, these clinicians are 26.8% more likely (effect size 0.39) to implement regular assessment of motor and non-motor symptoms in patients with PD through the utilization of measurement-based tools. Lastly, these same clinicians are 40.1% (effect size 0.64) more likely to implement treatments into an effective management plan for motor and non-motor symptoms of PD than their peers. Overall this program demonstrated an associated effect and clinicians are 27.4% (effect size 0.40) more likely to provide evidence based care for Parkinson's disease. Additional education is warranted to address confidence and educational need barriers to improve the care of the patients with Parkinson's disease.