

## Gait/Motion Analysis: PT Involvement - November 2020

### Survey Purpose & Questions – Questions posed by ORG A

Our organization is in the process of developing a formal Gait/Motion analysis lab/study program.

We will be partnering with our local university system (non-medical) on this program as they have the equipment and lab to complete gait/motion analysis. They do not have experience in pediatrics or children with impairments/disabilities.

We have been tasked with determining what role PT should play in the studies.

I would value information from those of you who have gait/motion analysis as a part of your programs.

What role does PT play in each of these components?

Physical Assessment:

Gait/motion study: (If PT is not present, who participates in this portion?)

Interpretation/Discussion/Recommendations: (If PT is not present, who participates in this portion?)

Documentation:

Other:

### **ORG B:**

Physical Assessment: PT is responsible for completing patient history and physical assessment which includes lower extremity goniometry, manual muscle testing, tone assessment, assessment of selective motor control, and anthropometrics

Gait/motion study: (If PT is not present, who participates in this portion?) PT is present for the entire gait study, including observational video, gross motor assessment, and instrumented gait analysis (kinematics, kinetics, plantar pressures, surface EMGs). PT oversees rehab assistants who assist with placement of surface EMGs and kinematic markers. PT collaborates with technical team throughout data capture to minimize crosstalk and optimize quality of data collected.

Interpretation/Discussion/Recommendations: (If PT is not present, who participates in this portion?) PT is present for multidisciplinary data review. PT presents the patient case including history, patient/family goals, referring provider goals, and physical exam measurements. PT assists with data interpretation and collaborates with the team on developing multi-disciplinary recommendations related to surgical intervention, tone management, orthotic management, and physical therapy management.

Documentation: PT is responsible for the written report which includes history, physical exam measures, gross motor observations, gait and postural observations, and documenting results of instrumented gait analysis. PT also records multi-disciplinary team recommendations following the weekly data review meeting.

### **ORG C**

Physical Assessment: PT's complete a full clinical evaluation. We often use photography and measure from the photographs in case our physicians have a question

Gait/motion study: (If PT is not present, who participates in this portion?) PT's perform the 3D gait analysis-2 therapists

Interpretation/Discussion/Recommendations: (If PT is not present, who participates in this portion?) PT discusses with medical director for interpretation, discussion and recommendations. This is handled in a team approach

Documentation: PT's document all parts of the study

Other: PT's manage maintenance of gait lab computers, updates, and interaction with engineers (off-site for us). Our lab is used both for orthotics and 3D surgical decision making. PT's involvement at every stage is valuable, even with the 3D gait studies as you are providing clinical decisions related to normal/abnormal gait pattern, use of orthotics, rehabilitation expectations. An onsite engineer would be valuable for computer related gathering of information, but a PT is essential for hands on clinical evaluation.

### **ORG D**

Physical Assessment: A gait lab PT completes the physical assessment.

Gait/motion study: (If PT is not present, who participates in this portion?) A gait lab PT sets up the patient with markers and EMG and works with them throughout the gait study while the engineer/tech runs the computer and cameras to capture the data.

Interpretation/Discussion/Recommendations: (If PT is not present, who participates in this portion?)

PT facilitates the gait interpretation and guides the process with the orthopedic surgeon who dictates a gait interp (includes a brief summary of data along with interpretation and recommendations).

Documentation: The PT completes a data report and a dictated report with a more detailed presentation of history, functional outcomes and gait data with a problem list.

Other:

The PT gathers functional data from the patient/family via questionnaires and also determines what pieces of data will be collected (EMG, multi-segment foot data, energy expenditure, testing in orthotics) depending on the reason for referral and clinical concerns and presentation of the patient.

## **ORG E**

Physical Assessment: PT completes majority along with ortho MD

Gait/motion study: (If PT is not present, who participates in this portion?) PT and gait lab engineer conduct study

Interpretation/Discussion/Recommendations: (If PT is not present, who participates in this portion?) PT is present along with PMR, ortho and neurosurgery

Documentation: PT is responsible for documentation, using data from gait lab engineer

## **ORG F**

Physical Assessment: PT performs comprehensive assessment including but not limited to assessment of ROM, MAS, Strength, selectivity, posture (especially of the foot), and at times will video parts of the GMFM, especially in children with CP

Gait/motion study: (If PT is not present, who participates in this portion?) PT is always present with engineer. This helps PT to understand gait deviations that may appear in the graphs the engineer compiles

Interpretation/Discussion/Recommendations: (If PT is not present, who participates in this portion?) PT performing the study always participates along with the engineer who processes the data and physicians. We currently have a neurologist who specializes in gait and an orthopedic physician in team conference

Documentation: We type up a unique, very comprehensive report

Other: <http://www.cmlainc.org/index.html> is a great resource to consult on standards of care

## **ORG G**

Physical Assessment:

The PT compiles a patient history and completes a full physical exam focused on the lower extremity (range of motions, strength, spasticity, motor control, etc.) The PT also assists the family in completing a number of PRO questionnaires.

Gait/motion study: (If PT is not present, who participates in this portion?)

The PT completes instrumentation (affixing reflective markers and EMG electrodes to the patient) and then manages the patient throughout data collection (handheld assist, redirecting on the walkway, monitoring for rest, etc.)

Interpretation/Discussion/Recommendations: (If PT is not present, who participates in this portion?)

The PT presents each case she was involved in and takes part in the ensuing discussion of impairment, goals, and recommendations for care.

Documentation:

The PT documents the gait analysis portion in a manner similar to an evaluation. Outcomes from the case review are summarized in a letter which is compiled into the final report.

Other:

Therapists take part in routine quality assurance programming in compliance with our accreditation.