CONTRIBUTION OF CLINICAL OUTCOME MEASURES TO DIRECT FUNCTIONAL REHABILITATION FOR INDIVIDUALS WITH TRANSFEMORAL AMPUTATIONS
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INTRODUCTION
Standardization of treatment in functional rehabilitation of individuals with amputations is difficult due to the nature of multiple variables that differ across patients. The current demands by insurance and third party payers’ for parameters that can be compared across various individuals and interventions has heightened the need to use quantifiable data, such as outcome measures, in clinical practice. In addition, evidence based practice strongly recommends the use of outcome measures to improve the quality of care delivered. This study evaluated the functional change in individuals with transfemoral (TF) amputations after they were trained with their mechanical knee as compared to after they were trained with a microprocessor knee, through the use of various performance-based, self reported and technology based clinical outcome measures.

METHOD
Ten subjects whose amputations were secondary to vascular disease participated in the study. Their ages ranged from 50 years to 78 years with mean age of 63.4 years. As they entered the study, subjects were randomly assigned to receiving the C-Leg first or Mechanical knee (M-knee) first. Throughout the entire study, the same foot (1M10) was used in order to eliminate that variable. They acted as their own controls and after six months received the other prosthesis. Outcome measures were assessed at baseline, 6 months and 1 year to evaluate the functional differences between the two knees for this population. These time intervals corresponded with their change in intervention (prosthesis design). The performance based measures were: six minute walk test for endurance, 10 meter walk test for gait speed, the Timed Up and Go, BERG Balance Scale and the Four Square Step Test for functional balance and fall risk. The self reports administered were: the Amputee Mobility Predictor, the Community Participation Indicators and the Prosthesis Evaluation Questionnaire. The technology based outcome measures were: Global Positioning System recorder and a Step Activity Monitor..

RESULTS
Of the ten subjects enrolled, eight have completed the study and their results have been included here. The analysis of the various outcomes measures showed a difference in functional outcomes between the C-Leg and M-knee. For example gait speed was significantly faster with the C-Leg vs M-knee as seen in Figure 1. Thus, researchers were able to identify not only an overall trend in the study group, but also how each individual subject tracked over the course of the study with each respective intervention.

DISCUSSION
Through the use of outcome measures, this study was able to provide insight into the increase in functional capacity for this specific population of individuals with TF amputations. For example, we were able to quantify the increase in gait speed and prosthesis preference in the AMP with a microprocessor knee as compared to a mechanical knee.

CONCLUSION
The use of outcome measures in daily clinical settings can provide focused treatments for individual patients that best meet their personal functional goals.

CLINICAL APPLICATIONS
Outcome measures help clinicians define the impact of treatment on the functional abilities of individuals with amputations. Outcome measures evaluate and quantify effectiveness of treatments and can identify if the plan of care needs to be redirected.

REFERENCES

Figure 1: 10 meter walk test with the M-Knee and C-Leg. Subjects 2-8 demonstrate that they were faster using the C-Leg as compared to the M-knee.