The Use of an iPad to Evaluate Patient-Reported Functional Outcome Measures in Hand Surgery
Mark Yaffe MD, Nitin Goyal BA, Daniel Kokmeyer MD, Gregory Merrell MD

Introduction
Accurate and efficient recording of patient-reported outcome measures is critical for improving quality of care. The purpose of this study was to
1. evaluate patient preferences regarding the use of iPad and paper questionnaire
2. assess the efficacy of using an iPad and paper questionnaires in a hand surgery practice
3. determine whether questionnaire length influences patient preferences and data collection
4. determine which patient characteristics are associated with a preference for an iPad-based outcomes assessment system

Methods
200 total patients in a single hand surgery practice were randomly assigned to one of four groups. Each group completed either the Michigan Hand Questionnaire (MHQ) or QuickDASH (QD) using either an iPad or pen and paper. Patient preferences, questionnaire completion and timing, and demographic data were analyzed.

Results
• iPad users more strongly preferred the same delivery system again compared to paper users (p<0.001)
  - iPad users: 94% (MHQ) and 90% (QD) prefer iPad again
  - Paper users: 52% (MHQ) and 42% (QD) prefer paper again
• iPad users found the MHQ “physically easy” to use” compared to paper users, but no difference was found for QD
• Time to completion between iPad and paper users was similar for the MHQ (7.1 min vs 7.4 min; p=0.662) but statistically greater for the QD (3.3 min vs 2.5 min; p=0.012)

Results, Continued
• The iPad group was associated with significantly fewer omissions for the QD questionnaire (0.0 vs 0.2, p=0.025), but no differences were found for the MHQ.
• A significantly higher proportion of patients who preferred the iPad were under the age of 50 compared to those who preferred paper (40.3% vs. 22.8%, p=0.014).

Conclusions
1. The addition of an iPad is an efficient and preferable questionnaire format for functional outcomes assessment in a hand and upper extremity surgery practice setting.
2. The iPad is particularly preferable for longer outcome questionnaires and for patients under the age of 50.