Functional Mobility Assessment: A Descriptive Analysis of Wheelchair Outcomes

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INTRODUCTION

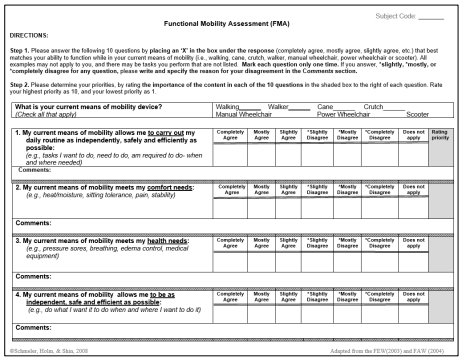
- Quality improvement plays a critical role in the assistive technology service delivery process
- RESNA guidelines highlight the importance of quality improvement leading to positive wheelchair user outcomes
- Validated mobility outcomes measurement tools can measure the impact of seating and mobility equipment on patient satisfaction and quality of life and guide quality improvement.



Figure 1. A wheelchair user heading to school

What is the Functional Mobility Assessment outcomes measurement tool?

- The Functional Mobility Assessment (FMA) is a validated patient-reported outcome measure consisting of 10-items.[1]
- High FMA score translates to positive outcomes for users[2]



Functional Mobility Assessment (FMA)

Subject Code: _____

DIRECTIONS:

Step 1. Please answer the following 10 questions by **placing an 'X' in the box under the response** (completely agree, mostly agree, slightly agree, etc.) that best matches your ability to function while in your current means of mobility (i.e., walking, cane, crutch, walker, manual wheelchair, power wheelchair or scooter). All examples may not apply to you, and there may be tasks you perform that are not listed. **Mark each question only one time.** If you answer, **"slightly," "mostly," or "completely disagree for any question,** please **write and specify the reason for your disagreement in the Comments section.**

Step 2: Please determine your priorities, by **rating the importance of the content in each of the 10 questions** in the shaded box to the right of each question. Rate your highest priority as 10, and your lowest priority as 1.

What is your current means of mobility device? (Check all that apply)	Walking_____ Walker_____ Cane_____ Crutch_____ Manual Wheelchair_____ Power Wheelchair_____ Scooter_____

	Completely Agree	Mostly Agree	Slightly Agree	*Slightly Disagree	*Mostly Disagree	*Completely Disagree	Does not apply	Rating priority
1. My current means of mobility allows me to carry out my daily routine as independently, safely and efficiently as possible: (e.g., tasks I want to do, need to do, am required to do- when and where needed)								
Comments:								
2. My current means of mobility meets my comfort needs: (e.g., heat/moisture, sitting tolerance, pain, stability)								
Comments:								
3. My current means of mobility meets my health needs: (e.g., pressure sores, breathing, edema control, medical equipment)								
Comments:								
4. My current means of mobility allows me to be as independent, safe and efficient as possible: (e.g., do what I want it to do when and where I want to do it)								
Comments:								

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Figure 2. Sample FMA section listing the first 4 items

METHODS

- Data collection: Quarterly follow-up phone calls with The Ohio State University Wexner Medical Center clients via third party service offered by the Van G. Miller Group
- Data Analysis: Performed ANOVA testing, post hoc analysis and regression testing on FMA scores collected at 8-time intervals from 4097 patients

RESULTS

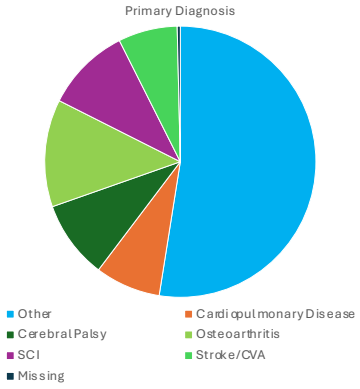
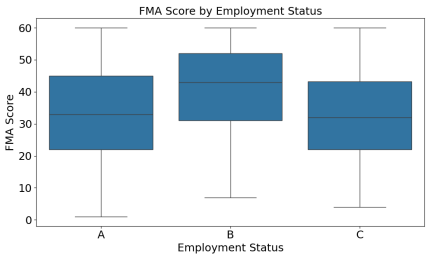


Figure 3. Pie chart of top 5 primary diagnosis among patients



A= Not Employed/ Not Student, B= Employed/Student/ Homemaker, C= Retired

Figure 4. Boxplot showcasing employment vs FMA score distribution at Time 1

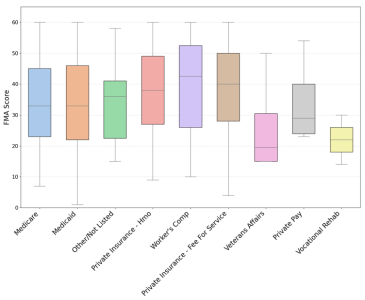


Figure 5. ANOVA Test of FMA Scores by Funding Source at baseline visit for client assessment

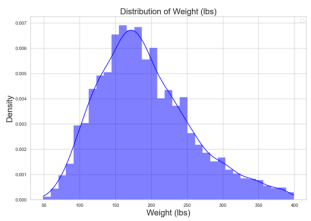


Figure 6. Distribution of Weight of patients at the clinic

Mean: 191.45
Standard Deviation: 65.72
Range: 350

RESULTS CONTINUED

FMA scores across Employment groups (Figure 4)

- "Not Employed/Not a Student" FMA score is 3.63 points lower on average than the "Employed/Student/ Homemaker/Volunteer" group
- Retired group FMA score is 4.40 points lower than the "Employed/Student/Homemaker/Volunteer" group

FMA scores across Funding Sources (Figure 5)

- Private pay > Public Insurance by $p<0.05$
- Medicare scores > Medicaid scores $p<0.05$

Weight vs FMA (Figure 6)

- A weak relationship depicts higher weight tends to have a lower FMA score
- Weight explains 1.2% of the variance in FMA

Post-Hoc Analysis:

- Amongst 8 time intervals, difference lies between time 1 and latter FMA scores p<0.05
- No significant difference between latter FMA scores
- Any additional results of correlation and post-hoc testing?

DISCUSSION

- Funding, employment, income, weight influence patient outcomes
- Outcomes provide further detail to areas requiring quality improvement
  - Wheelchair users who are not employed, not a student and are retired require changes in services to improves functional mobility outcomes
- Follow-up visits can inform the nature of interventions for clients with lower FMA scores.

CONCLUSION

- FMA scores reflect components of the service delivery process that are functioning well and need improvement.
- Seating interventions lead to significant health and functional gains over time

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