Using the FIM to Evaluate Health Equity
Best Practices 2018 Day

May 25, 2018
Health Equity and FIM

Purpose
• to investigate possible health inequities among rehabilitation inpatients as indicated by the Functional Independence Measure (FIM) instrument

Methods
• Data were merged from the NRS and HE database
• HE survey comprises eight elements:
  • spoken language
  • country of birth
  • racial or ethnic group
  • disability
  • gender
  • sexual orientation
  • income
  • the number of people supported by the reported income.
Analysis

• Multivariate Analysis of Variance (MANOVA) was used to test for differences between HE sub-groups

• Age, gender and number of comorbidities were included as covariates in the MANOVA model.

• As there were more than two sub-groups for Ethnicity, independent samples t-tests were conducted to determine pairwise differences where a main effect was detected by the MANOVA
Results

• During the study period, 745 pts had completed HE and FIM data
• Subjects were 66.1 ± 16.1 years of age
• There were 342 (45.5%) female and 403 (54.5%) male patients
• The mean length of stay (LOS) was 28.7 ± 18.5 days (range 4-92 days)
Language
English Speaking

Admission FIM

FIM Score

English-Speaking (n=566)
Non-English-speaking (n=179)
English Speaking

Discharge FIM

- FIM Total
- Fim Motor
- Fim Cognitive

English-Speaking (n=566)
Non-English-speaking (n=179)
English Speaking

![FIM Change Diagram]

- **FIM Change**
  - English-Speaking (n=566)
  - Non-English-speaking (n=179)

*Significant difference indicated by asterisk.*
• **Admission:** mean Total FIM score of patients born in Canada is *9.1% higher* than those not born in Canada (91.5 vs. 83.9, p<.001)

• **Discharge:** discrepancy is reduced to *3.4%* (110.0 vs. 106.6, p<.05)

• Difference reduced by *63%*

• Though the FIM score of those not born in Canada remained statistically lower at discharge, their FIM score increase was *statistically greater* (22.7 vs. 18.5, p=.01)
Country of Birth
Born in Canada

![Bar chart showing FIM scores for Born in Canada and Not born in Canada groups.

- FIM Total
- Fim Motor
- Fim Cognitive

Born in Canada (n=325)
Not born in Canada (n=403)
Born in Canada

![Bar chart showing FIM Change for Born in Canada and Not born in Canada. The bar for Not born in Canada is significantly higher.]

- Born in Canada (n=325)
- Not born in Canada (n=403)
• **Admission:** mean Total FIM score of patients born in Canada is **8.1% higher** than those not born in Canada (93.6 vs. 86.6, p<.001)

• **Discharge:** discrepancy is reduced to **3.3%** (111.2 vs. 107.6, p<.001)

• Difference reduced by **59%**

• Though the FIM score of those not born in Canada remained statistically lower at discharge, their FIM score increase was statistically **greater** (21.0 vs. 17.6, p=.001)
Self-Identified Ethnicity
Ethnicity

Admission FIM

- FIM Total
- Fim Motor
- Fim Cognitive

Asian (n=114)
Black (n=63)
White (n=496)
Other (n=51)
Ethnicity

Discharge FIM

- FIM Total
  - Asian (n=114)
  - Black (n=63)
  - White (n=496)
  - Other (n=51)

- FIM Motor

- FIM Cognitive

NS

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Ethnicity

![Bar chart showing FIM Change by ethnicity]

- Asian (n=114)
- Black (n=63)
- White (n=496)
- Other (n=51)
Ethnicity

- **Admission:** mean Total FIM score of Asian pts is **13.6% higher** than black pts (95.7 vs. 84.2, \(p<.01\))
- **Discharge:** discrepancy is reduced to **4.7%** (111.7 vs. 106.7, \(p<.05\))
- **Difference reduced by 65%**
- Though the FIM score of black pts remained statistically lower at discharge, their FIM score increase was **statistically greater** (22.5 vs. 16.0, \(p=.01\))
HE Data and FIM

• Significant achievements made in **reducing the disparity** in FIM scores when patients partitioned by language, country of birth or ethnicity

• Though some disparity remains at discharge, groups with the lower FIM group at admission demonstrated much **greater gains** during their LOS

• Continued monitoring of FIM performance by HE category will support interventions to reduce these discrepancies further
Questions?