Body Mass Index (BMI) Risk Zones and Variations in Obesity Detection in Veterans with Spinal Cord Injury (SCI)

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WIP 10/29/18
VA Merit Application: Take 1 2 3

• Reviewer comments

• Brief Background

• Specific Aims

• Reviewer comments
Reviewer Comments

1. The study addresses an important issue studying the ascertainment of body mass index (BMI) in patients with spinal cord injury (SCI) in order to be able to address issues of obesity and being overweight.
2. Extensive response to previous round of reviews was included.
3. There is strong development of preliminary data.
Reviewer Comments

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2. Extensive response to previous round of reviews was included.

3. There is strong development of preliminary data.

4. There is a lack of an overarching conceptual framework despite the incorporation of Consolidated Framework for Implementation Research (CFIR) and the International Classification of Functioning Disability and Health (ICF).

5. Sampling a single provider and single patient at each site is of mixed concern to the panel.

6. It is not clear whether validation is needed for the DSS identification and Stop codes approach to identifying Veterans with SCI who do not have an ICD code but are seen at a Spinal Cord Center.
Background

BMI:
18-25 = “normal”
25-30 = “overweight”
>30 kg/m² = “obese”

Derived from NHANES data (http://www.cdc.gov/nchs/data/hestat/obesity_adult_09_10/obesity_adult_09_10.html#table1)
Background

U.S. Veterans Health Administration (VHA)

- Largest integrated health care system
  - 9,400,000 Veterans enrolled
- 75% are Overweight or Obese
- 37% are Obese
Background

VA Clinical Practice Guidelines

1. Adult enrolled in VHA health care system

2. Screen for overweight and obesity ANNUALLY (Obtain height and weight, and calculate BMI)

3. Is the Veteran overweight? (BMI > 25 kg/m²)
Background

HYPOTHESIS:

• BMI-based screening strategy fails to detect obesity in Veterans with Spinal Cord Injury (SCI)

1. FAILURE OF GUIDELINE-CONCORDANT SCREENING STRATEGY
   • Difficult to obtain Height and Weight in SCI patients

2. FAILURE OF STANDARD BMI RISK ZONES TO DETECT OBESITY
   • BMI may not reflect obesity in these SCI
Specific Aims

   - **Aim 1a:** Determine the overall and facility-level annual proportions of Veterans with SCI that received guideline-concordant BMI assessment.
   - **Aim 1b:** Quantitatively examine the patient and facility factors that influence odds of Veterans with SCI receiving guideline-concordant BMI assessment.
   - **Aim 1c:** Calculate facility-level changes in BMI assessment from FY16 to FY18.
Specific Aims
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2. Qualitatively understand drivers of facility-level variation in BMI assessment.
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Overarching Framework:

• **CFIR** (Consolidated Framework for Implementation Research)
  • Assess existing or potential barriers and facilitators for implementation using 5 domains:
    • Intervention
    • Inner Setting
    • Outer Setting
    • Individual Characteristics
    • Process
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• **ICF** (International Classification of Functioning, Disability, and Health)
  • Model to understand disease, illness, and disability; also including environmental factors.
    • Impairment of body functions/body structures
    • Activity limitations & participation restriction
    • Environmental factors
    • Other Contextual Information
Specific Aims

2. Qualitatively understand drivers of facility-level variation in BMI assessment.
Specific Aims

   • Using FY05-07 VHA data we will identify an index date for all VHA Veterans with SCI without obesity-related comorbidity, and follow them over the ensuing 10-13 years for the occurrence of a comorbidity.
Reviewer Comments

4. There is a lack of an overarching conceptual framework despite the incorporation of Consolidated Framework for Implementation Research (CFIR) and the International Classification of Functioning Disability and Health (ICF)

5. Sampling a single provider and single patient at each site is of mixed concern to the panel.
## Sampling

<table>
<thead>
<tr>
<th>Facility Selection</th>
<th>High Performing (n=30)</th>
<th>Low Performing (n=30)</th>
<th>Improving (n=30)</th>
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<tbody>
<tr>
<td>Providers (n=30)</td>
<td>10 (1/facility)</td>
<td>10 (1/facility)</td>
<td>10 (1/facility)</td>
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<tr>
<td>Veterans (n=30)</td>
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<td>Level of Injury</td>
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### Stratified Purposeful Sampling

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<td>30 Veterans</td>
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<td>10 (2/facility)</td>
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<table>
<thead>
<tr>
<th>FY17</th>
<th>StopCode</th>
<th>StopCodeName</th>
<th>Count of patients with clinic stop visit but no SCI diagnosis on the same visit</th>
<th>Patients with clinic stop and SCI diagnosis on the same visit</th>
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