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

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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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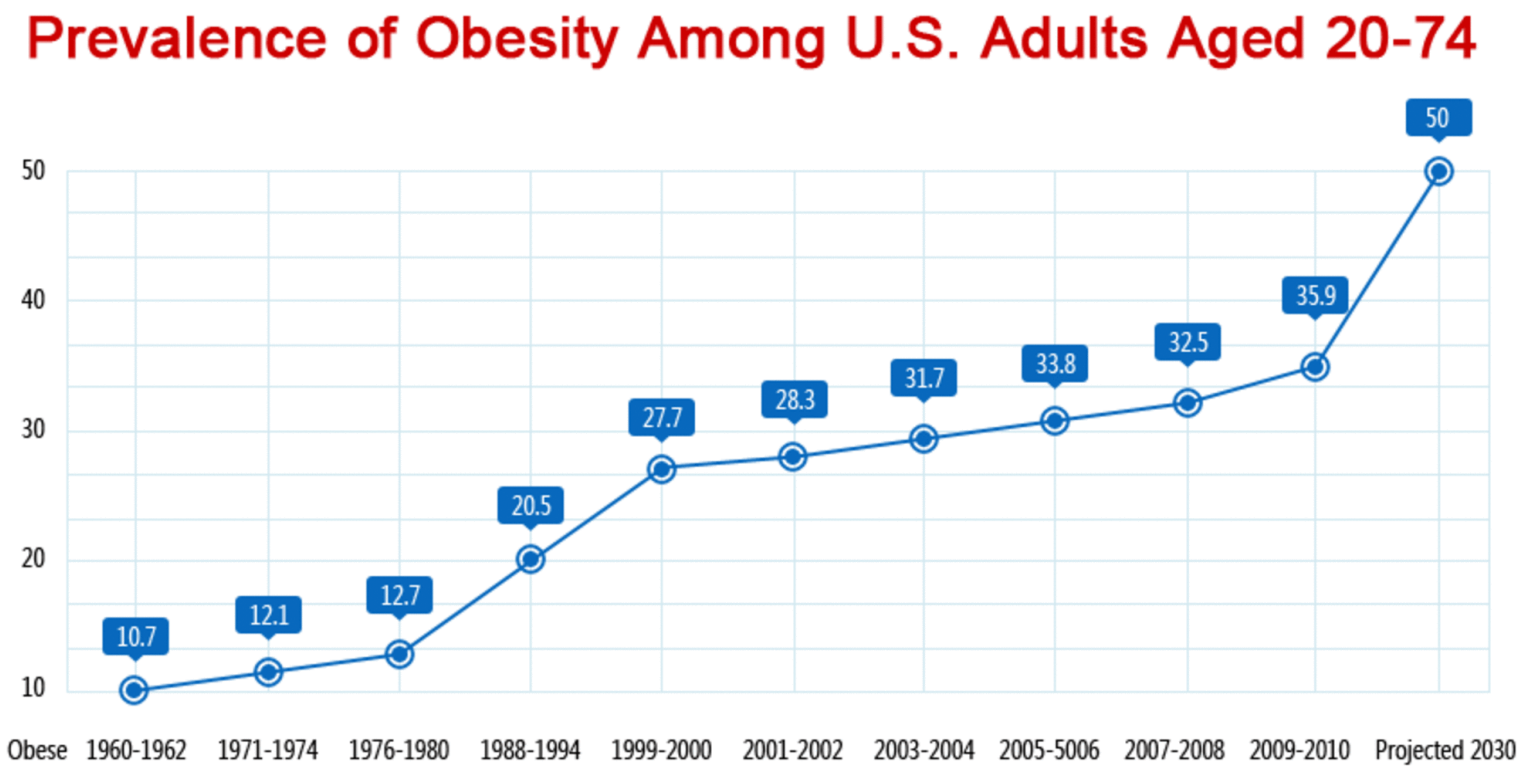
2. Extensive response to previous round of reviews was included.
3. There is strong development of preliminary data.
4. There is a lack of an overarching conceptual framework despite the incorporation of Consolidated Framework for Implementation Research (CFIR) and the International Classification of 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



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

BMI:
18-25 = “normal”
25-30 = “overweight”
>30 kg/m^2= “obese”

Background

U.S. Veterans Health Administration (VHA)

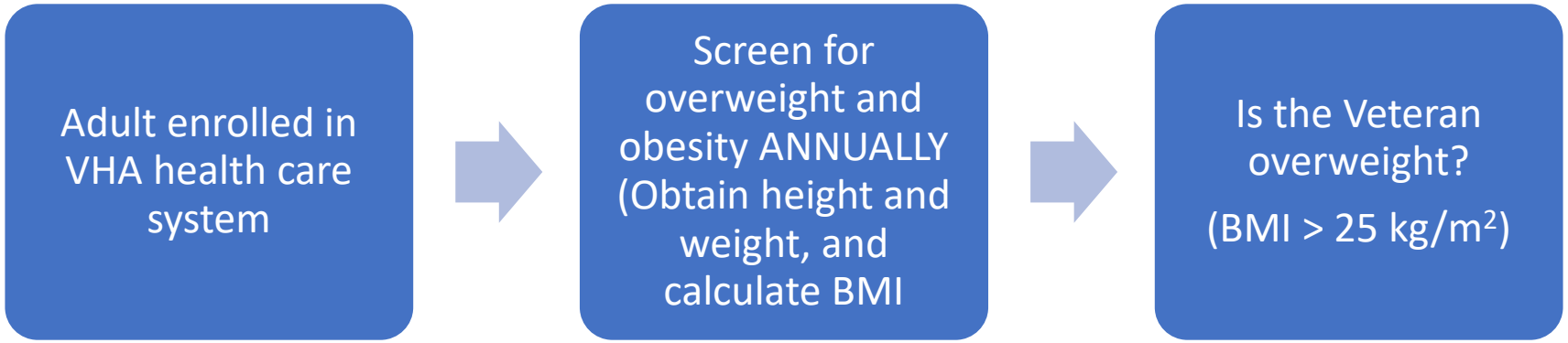
- Largest integrated health care system

  9,400,000 Veterans enrolled

  - 75% are Overweight or Obese
  - 37% are Obese

Background

VA Clinical Practice Guidelines



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

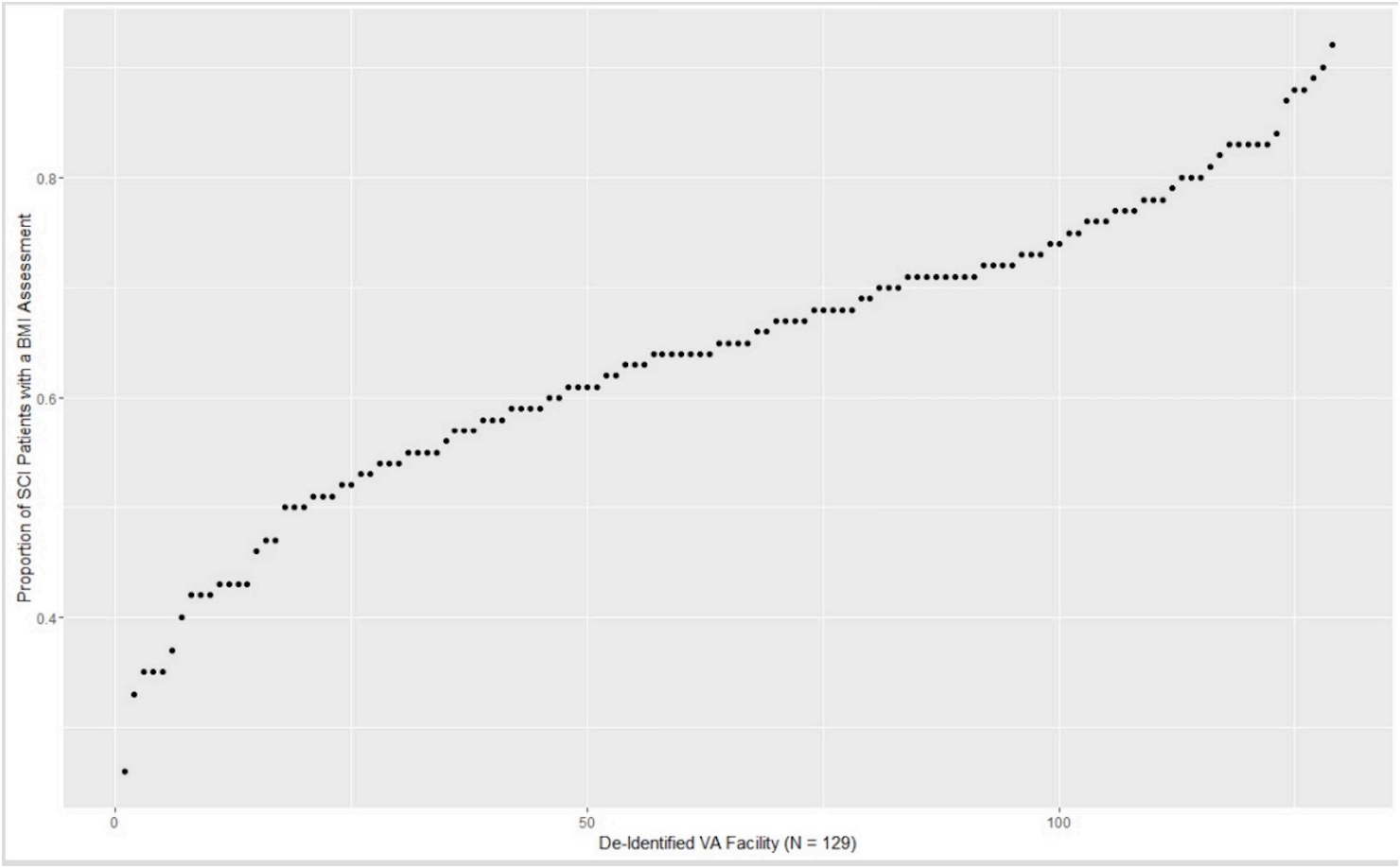
2. FAILURE OF STANDARD BMI RISK ZONES TO DETECT OBESITY
   - BMI may not reflect obesity in these SCI

Specific Aims

1. Characterize the distribution and predictors of guideline-concordant BMI assessment in Veterans with SCI in FY16-18.

- *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



Specific Aims

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

Provider

10. Appendices

Appendix 3: Preliminary interview guide to understand VA health care *Providers'* approach to assessing BMI in Veterans with SCI

CFIR constructs and qualitative techniques	***Example questions***
Provider background	• Briefly tell me about your practice • Tell me about your experience working with Veterans with SCI?
BMI Assessment Practices	***BMI Screening*** • Tell me about your approach to screening Veterans with SCI for obesity. • Do you assess BMI? • If so, how do you assess BMI in patients with SCI? How is height and weight measured? How often do you assess BMI? • Does the level of SCI injury influence your ability to measure BMI? • What happens after you assess BMI? • If not, tell me more about why BMI is not assessed. • Do you talk to patients with SCI about their BMI? Do you talk to patients about their weight? Why/why not? • Have you changed your screening practices over past several years? If so, why? In what way? ***BMI Support*** • What support do you have to assist you with BMI assessment and management? Is there other support that is needed?
CFIR: Evidence Strength & Quality	• What do you think about the requirement for annual BMI assessment for all Veterans with SCI? • What is supporting evidence is needed to get people on board to measure BMI?
CFIR: Complexity	• How complicated is it to assess BMI for Veterans with SCI? • How much staff/assistance is needed in most cases of height and weight measurement in patients with SCI? How does that compare with able-bodied patients?
CFIR: Knowledge & Beliefs	• What do you know about measuring BMI among Veterans with SCI? • Is it important to measure BMI for Veterans with SCI? Why or why not? Do you use BMI data in clinical care of Veterans with SCI? • Are there any guidelines that you refer to when making decisions about BMI assessment for patients with SCI?
CFIR: Patient Needs & Resources	• Are the needs of patients with SCI and obesity met? Why or why not? • What support do obese Veterans with SCI need? • What are the barriers to obtaining height and weight regularly? • Have you ever talked with Veterans with SCI about their BMI? Have Veterans talked to you about it?
CFIR: Available Resources	• Do you have the necessary resources to assess BMI? Why/Why not? • Do you use special equipment when measuring height/weight in SCI patients?
CFIR: Tension for Change	• Is there a need for measuring BMI in Veterans with SCI? Why/why not?
CFIR: Structural Characteristics	• What infrastructure changes are needed to assist you with performing routine BMI assessment?
CFIR: Self-efficacy	• How confident are you in your ability to provide BMI assessments? • What is your comfort level in providing obesity care in patients with SCI?
Conclusion	• Please describe any other factors that may hinder BMI assessment. • Please describe any other factors that may help with BMI assessment. • Is there anything you would like to add to our conversation today?

Veteran

10. Appendices

Appendix 4: Preliminary interview guide to understand *Veterans'* experiences of living with SCI and increased BMI

Domains adapted from the ICF framework and general qualitative interviewing techniques	***Example questions***
Veteran background	• Briefly tell me about yourself and your health. • Briefly tell me about your experience living with a spinal cord injury
ICF: Environmental factors	• Does your health care provider measure your weight? Does your provider measure your height? • Has a health provider ever talked to you about your body mass index (ratio of height and weight)? What did they say? • Has a health provider ever talked to you about your weight? • Have you ever been told you are obese? • What are your thoughts about having a conversation with your doctor about your weight? What would you like to discuss? What would you not want to discuss? • Any feedback on discussing your weight with your health care provider?
ICF: health condition	• How do you feel about your weight? • Do you have any concerns about your weight? • In what way does your weight impact your daily life?
ICF: Body functions & Structures	• Does your weight have any impact on your body? (e.g., mental functions, muscle power, physical functions, skin health, breathing, etc)
ICF: Activities & Participation	• Does weight have any impact on your mobility? (e.g., difficulty moving, daily tasks, self-care) Why/why not? • Does your weight have any impact on your ability to participate in daily activities? (e.g., employment, home life, transportation) Why/why not? • Does SCI impact your ability to participate in your healthcare? • Does your weight have any impact on your ability to interact with other people? (e.g., social, romantic relationships) Why/why not?
ICF: Environmental factors	• When thinking about your weight, to what extent does anything in your environment impact your life? (e.g., barriers/facilitators, products/technology, building design, immediate family, etc.) • Tell me about your support system.
ICF: Personal factors	• Have you ever thought about losing or gaining weight? Why or why not?
Conclusion	• What support do you need to be an active participant in health screening in general? In weight/BMI screening specifically? Is there anything you would like to add to our conversation today?

Specific Aims

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

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

Specific Aims

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  - Assess existing or potential barriers and facilitators for implementation using 5 domains:
    - Intervention
    - Inner Setting
    - Outer Setting
    - Individual Characteristics
    - Process

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.**

12. Appendix 3 – Interview Guide

Interview questions are informed by CFIR CONSTRUCTS AND QUALITATIVE TECHNIQUES enhanced by domains adapted from the ICF framework.

Background on Veterans with SCI *(Qualitative techniques)*

Provider Questions	Patient Questions
• Tell me about your experience working with Veterans with SCI.	• Briefly tell me about yourself and your experience living with a spinal cord injury.

CFIR: Work Processes and Available Resources for BMI Assessment Practices *(ICF: Environmental Factors)*

BMI Screening

Provider Questions	Patient Questions
• Tell me about your process for screening Veterans with SCI for obesity. • Do you assess BMI (or Height and Weight)? Why/why not? •Does this differ between Veterans with tetraplegia versus paraplegia? •Have there been any changes to BMI assessment practices? •How do patients respond to BMI screening? •What happens if a Veteran's BMI indicates overweight or obesity?	• Does your healthcare provider measure your Height? Weight? Or "body mass index" (BMI)? Tell me about this process. • If so, what was that experience like for you? • Do you have any feedback on discussing your weight or BMI with your health care provider? •If not, what are your thoughts about having your BMI measured?

BMI Support

Provider Questions	Patient Questions
• What support do you have to assist you with BMI assessment and management? Is there other support that is needed? (e.g., for you, for patients, time, etc) •What support is needed for Veterans with SCI to manage their obesity?	• What support/resources do you need when having your BMI measured by your provider? • Does your provider have the necessary resources/support to measure your BMI? If not, then what is needed? •What weight management support do you have/need?

Specific Aims

3. **Evaluate and calibrate SCI-specific, adjusted BMI risk zones.**

- 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

Stratified Purposeful Sampling						
Facility Selection	High Performing (n=30)		Low Performing (n=30)		Improving (n=30)	
Providers (n=30)	10 (1/facility)		10 (1/facility)		10 (1/facility)	
Veterans (n=30)	10 (1/facility)		10 (1/facility)		10 (1/facility)	
Level of Injury	5 Tetraplegia	5 Paraplegia	5 Tetraplegia	5 Paraplegia	5 Tetraplegia	5 Paraplegia

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Level of Injury	5 Tetraplegia	5 Paraplegia	5 Tetraplegia	5 Paraplegia	5 Tetraplegia	5 Paraplegia

Stratified Purposeful Sampling						
15 Facilities	5 High-Performing		5 Low-Performing		5 Improving	
30 Providers	10 (2/facility)		10 (2/facility)		10 (2/facility)	
30 Veterans	10 (2/facility)		10 (2/facility)		10 (2/facility)	
Level of Injury						
-Tetraplegia	5(1/facility)	5(1/facility)	5(1/facility)	5(1/facility)	5(1/facility)	5(1/facility)
-Paraplegia	5(1/facility)	5(1/facility)	5(1/facility)	5(1/facility)	5(1/facility)	5(1/facility)

Reviewer Comment

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.

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FY17

StopCode	StopCodeName	Count of patients with clinic stop visit but no SCI diagnosis on the same visit	Patients with clinic stop and SCI diagnosis on the same visit
177	HBPC - OTHER	12170	224
210	SPINAL CORD INJURY	12695	15007
215	SCI HOME CARE PROGRAM	286	2086
224	TELEPHONE SCI	4085	9818
225	SCI TELEHEALTH VIRTUAL	489	2535