Early Findings from the RAND IMPACT National Beta Test of Candidate Standardized Patient Assessment Data Elements (SPADEs)

November 27, 2018
<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00</td>
<td>Welcome, Overview of PAC assessment standardization goals</td>
</tr>
<tr>
<td>12:25</td>
<td>Beta Design; Sample Description</td>
</tr>
<tr>
<td>12:35</td>
<td>Beta results – Summary of overarching findings</td>
</tr>
<tr>
<td>12:45</td>
<td>Beta results by data element categories – Cognitive Status</td>
</tr>
<tr>
<td>1:00; 1:20</td>
<td>Questions; Break</td>
</tr>
<tr>
<td>1:30</td>
<td>– Mental Status</td>
</tr>
<tr>
<td>1:45</td>
<td>– Medical Conditions</td>
</tr>
<tr>
<td>1:55</td>
<td>– Impairments</td>
</tr>
<tr>
<td>2:10</td>
<td>– Special Services, Treatments, and Interventions (SSTI)</td>
</tr>
<tr>
<td>2:20; 2:40</td>
<td>Questions; Break</td>
</tr>
<tr>
<td>2:50</td>
<td>– Other (Medication Reconciliation, Care Preferences, Global Health)</td>
</tr>
<tr>
<td>3:10</td>
<td>Non-Communicative data elements (Cognitive Status, Mood, Pain)</td>
</tr>
<tr>
<td>3:20</td>
<td>Wrap-up</td>
</tr>
<tr>
<td>3:30</td>
<td>Final Questions</td>
</tr>
<tr>
<td>4:00</td>
<td>Close</td>
</tr>
</tbody>
</table>
# Terms and Abbreviations

- **IMPACT Act** = Improving Medicare Post-Acute Care Transformation Act
- **PAC** = Post-acute care
- **CMS** = Centers for Medicare & Medicaid Services
- **SPADEs** = Standardized patient/resident assessment data elements
- **TEP** = Technical Expert Panel
- **SME** = Subject Matter Experts
- **PC** = Public Comment
- **Alpha 1,2** = Pilot testing of early-stage data elements
- **Beta** = National testing of candidate SPADES
- **Data Element Abbreviations:**
  - **BIMS** = Brief Interview of Mental Status
  - **CAM** = Confusion Assessment Method
  - **PHQ** = Patient Health Questionnaire (PHQ-9, PHQ-2, PHQ-2 to 9)
  - **PHQ-9 OV** = Observational Version
  - **SSTI** = Special Services, Treatments and Interventions
- **PAC Providers Covered by the IMPACT Act of 2014:**
  - **IRF** = Inpatient Rehabilitation Facility
  - **LTCH** = Long-Term Care Hospital
  - **SNF** = Skilled Nursing Facility
  - **HHA** = Home Health Agency
- **Existing PAC Assessment Instruments:**
  - **IRF-PAI** = Inpatient Rehabilitation Facility Patient Assessment Instrument
  - **LCDS** = LTCH CARE Data Set
  - **MDS** = Minimum Data Set
  - **OASIS** = Outcome and Assessment Information Set
Project Team

CMS Division of Chronic and Post-Acute Care

Stella Mandl, RN, BSN, BSW, PHN
Director

Tara McMullen, PhD, MPH
Technical Advisor, Gerontologist

Mary Pratt, MS, RN
Deputy Director

Charlayne Van, JD
Contracting Officer’s Representative

RAND

Maria Edelen, PhD
Project Director

Emily Chen, PhD
Project Co-Director

Sangeeta Ahluwalia, PhD, MPH
Training Lead

Anthony Rodriguez, PhD
Lead Psychometrician

Susan Paddock, PhD
Senior Statistician
Acknowledgements

A heartfelt thank you to all of the provider organizations that contributed their staff, their time, and their energy to making the pilot and national field tests a success.

And a special thanks to the thousands of patients and residents and their families who participated in the pilot and national field tests.
Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014

- Bill passed on September 18, 2014 and signed into law on October 6, 2014
- Requires standardized patient assessment data across post-acute care (PAC) settings to enable:
  - Improvements in quality of care and outcomes
  - Comparisons of quality across PAC settings
  - Information exchange across PAC settings
  - Enhanced care transitions and coordinated care
  - Person-centered and goals-driven care planning and discharge planning
PAC Providers Covered by the IMPACT Act

- Home Health Agencies (HHAs)
- Inpatient Rehabilitation Facilities (IRFs)
- Long-Term Care Hospitals (LTCHs)
- Skilled Nursing Facilities (SNFs)
Data Elements: Standardization

Data Elements

Uniformity

OASIS-C

MDS 3.0

IRF-PAI

LTCH CARE

Data Set

Data Elements

Uniformity

OASIS-C

MDS 3.0

IRF-PAI

LTCH CARE

Data Set
Categories Identified for Standardization in the IMPACT Act

- Function (e.g., self care and mobility)
- Cognitive function (e.g., express & understand ideas; mental status, such as depression and dementia)
- Special services, treatments & interventions (e.g., need for ventilator, dialysis, chemotherapy, and total parenteral nutrition)
- Medical conditions and co-morbidities (e.g., diabetes, heart failure, and pressure ulcers)
- Impairments (e.g., incontinence; impaired ability to hear, see, or swallow)
- Other categories
Guiding Principles for Evaluation of Candidate SPADEs

- **Potential for improving quality**
  - Improve care transitions, person-centered care and care planning
  - Improve care practices and patient safety
  - Use for quality comparisons, including value based payment models
  - Supports clinical decision making and care coordination

- **Validity and reliability**
  - Inter-rater reliability (consensus in ratings by two or more assessors)
  - Validity (captures the construct being assessed)

- **Feasibility for use in PAC**
  - Potential to be standardized and made interoperable across settings
  - Clinically appropriate
  - Relevance to work flow

- **Utility for describing case mix**
  - Potential use for payment models
  - Measures differences in severity levels related to resource needs
Consensus Vetting Activities

In addition to these guiding principles, CMS and RAND have solicited and considered input from technical and clinical subject matter experts, public comment periods, and other consensus input opportunities throughout the duration of this contract.

• Technical Expert Panel – meetings in January 2016, April 2017, and September 2018
• Special Open Door Forums – 9 between 2014 and 2018
• Blueprint Public Comment Periods – September to October 2016 (PC1), April to June 2018 (PC2)
• Public Comment Periods for FY2018/CY2019 Notice of Proposed Rulemaking for IPPS/LTCH, IRF, SNF, and HHA Proposed Rules – April to September 2017
• Small group discussions with PAC associations – January to June 2018
• Dialogues with clinical staff during testing on feasibility, clinical usability, etc.
NATIONAL BETA TEST: DESIGN AND SAMPLE DESCRIPTION
Data Element Development and Testing

The project goal is to develop, implement, and maintain standardized PAC patient assessment data

• Project phases:
  1. Information Gathering: September 2015 – April 2016

• The National Field Test Assessment Protocols are referred to throughout this presentation and posted at the link at the bottom of this page:

Data Element Categories Tested in Beta

- Cognitive Status
- Mental Status
- Medical Conditions: Pain
- Impairments: Vision and hearing; Continence
- Special Services, Treatments, and Interventions (SSTI)
- Other
  - Care Preferences
  - Global Health
  - Medication Reconciliation
Design

- Data collectors were trained research nurses and staff at participating facilities/agencies
- Three major types of assessments
  - Communicative Admission
  - Communicative Discharge
  - Non-Communicative
- Subset of patients/residents were assessed by assessor pairs to evaluate interrater reliability of data elements
- Subset of patients/residents were assessed on admission days 3, 5, and 7 to evaluate effect of varying lookback periods
- Near the end of the field period, data collectors participated in an assessor survey, field staff in-person focus groups, and a research nurse teleconference to provide feedback on their experiences and impressions of the candidate SPADEs
Beta Test Markets

**EAST REGION**
- Boston, MA
- Philadelphia, PA
- Harrisburg, PA
- Durham, NC
- Ft. Lauderdale, FL

**CENTRAL REGION**
- Kansas City, MO
- St. Louis, MO
- Nashville, TN
- Chicago, IL

**WEST REGION**
- Los Angeles, CA
- San Diego, CA
- Phoenix, AZ
- Dallas, TX
- Houston, TX
Sample Sizes

Participating providers

<table>
<thead>
<tr>
<th></th>
<th>HHA</th>
<th>IRF</th>
<th>LTC H</th>
<th>SNF</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35</td>
<td>23</td>
<td>25</td>
<td>60</td>
<td>143</td>
</tr>
</tbody>
</table>

Communicative Assessments

<table>
<thead>
<tr>
<th></th>
<th>HHA</th>
<th>IRF</th>
<th>LTC H</th>
<th>SNF</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Total</td>
<td>653</td>
<td>794</td>
<td>507</td>
<td>1167</td>
<td>3121</td>
</tr>
<tr>
<td>IRR</td>
<td>199</td>
<td>261</td>
<td>242</td>
<td>274</td>
<td>976</td>
</tr>
<tr>
<td>3,5,7 Repeat</td>
<td>112</td>
<td>150</td>
<td>91</td>
<td>239</td>
<td>592</td>
</tr>
<tr>
<td>Discharge</td>
<td>148</td>
<td>349</td>
<td>91</td>
<td>235</td>
<td>823</td>
</tr>
</tbody>
</table>
## Provider Sample Characteristics

<table>
<thead>
<tr>
<th></th>
<th>HHA (N=35)</th>
<th>IRF (N=23)</th>
<th>LTC H (N=25)</th>
<th>SNF (N=60)</th>
<th>TOTAL (N=143)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ownership</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For profit</td>
<td>31.4</td>
<td>43.4</td>
<td>16.0</td>
<td>70.1</td>
<td>46.9</td>
</tr>
<tr>
<td>Nonprofit</td>
<td>65.7</td>
<td>26.7</td>
<td>84.0</td>
<td>26.7</td>
<td>49.0</td>
</tr>
<tr>
<td>Government</td>
<td>2.9</td>
<td>3.3</td>
<td>0.0</td>
<td>3.3</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Freestanding</strong></td>
<td>NA</td>
<td>47.8</td>
<td>NA</td>
<td>91.7</td>
<td>79.5*</td>
</tr>
<tr>
<td><strong>Urbanicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan</td>
<td>80.0</td>
<td>100</td>
<td>100</td>
<td>86.7</td>
<td>89.5</td>
</tr>
<tr>
<td>Micropolitan</td>
<td>8.6</td>
<td>0.0</td>
<td>0.0</td>
<td>3.3</td>
<td>3.5</td>
</tr>
<tr>
<td>Small Town</td>
<td>11.4</td>
<td>0.0</td>
<td>0.0</td>
<td>6.7</td>
<td>5.6</td>
</tr>
<tr>
<td>Rural</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>3.3</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Number of beds</strong></td>
<td>NA</td>
<td>285 (30, 881)</td>
<td>136 (31, 675)</td>
<td>142 (30, 467)</td>
<td>171 (30, 881)</td>
</tr>
<tr>
<td><strong>Nurse to bed ratio</strong></td>
<td>NA</td>
<td>1.0</td>
<td>0.5</td>
<td>1.0</td>
<td>0.7</td>
</tr>
</tbody>
</table>

* % of IRF and SNF sites
### Patient/Resident Respondent Characteristics

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>HHA (653)</th>
<th>IRF (794)</th>
<th>LTCH (507)</th>
<th>SNF (1167)</th>
<th>Total (3121)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>0.0</td>
<td>0.1</td>
<td>0.2</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>25-44</td>
<td>0.6</td>
<td>0.8</td>
<td>4.8</td>
<td>0.8</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>45-64</td>
<td>9.7</td>
<td>7.8</td>
<td>25.1</td>
<td>6.7</td>
<td>10.6</td>
<td>10.6</td>
</tr>
<tr>
<td>65-74</td>
<td>28.1</td>
<td>38.9</td>
<td>34.8</td>
<td>26.2</td>
<td>31.2</td>
<td>31.2</td>
</tr>
<tr>
<td>75-89</td>
<td>49.9</td>
<td>45.0</td>
<td>32.1</td>
<td>50.1</td>
<td>45.9</td>
<td>45.9</td>
</tr>
<tr>
<td>90+</td>
<td>11.6</td>
<td>7.3</td>
<td>3.1</td>
<td>16.3</td>
<td>10.9</td>
<td>10.9</td>
</tr>
<tr>
<td>Length of stay</td>
<td>Length of stay</td>
<td>HHA (653)</td>
<td>IRF (794)</td>
<td>LTCH (507)</td>
<td>SNF (1167)</td>
<td>Total (3121)</td>
</tr>
<tr>
<td>Home</td>
<td>74.1</td>
<td>42.9</td>
<td>20.0</td>
<td>44.3</td>
<td>46.4</td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>3.7</td>
<td>5.1</td>
<td>6.9</td>
<td>10.3</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Hospice</td>
<td>1.9</td>
<td>0.9</td>
<td>2.6</td>
<td>0.9</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>SNF</td>
<td>1.0</td>
<td>14.1</td>
<td>29.3</td>
<td>4.0</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td>IRF</td>
<td>0.6</td>
<td>0.1</td>
<td>9.7</td>
<td>0.1</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>HHA</td>
<td>2.4</td>
<td>34.1</td>
<td>16.6</td>
<td>25.7</td>
<td>21.4</td>
<td></td>
</tr>
<tr>
<td>LTCH</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
<td>0.9</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>16.2</td>
<td>2.7</td>
<td>14.8</td>
<td>13.8</td>
<td>11.6</td>
<td></td>
</tr>
</tbody>
</table>
BETA RESULTS

OVERALL FINDINGS and
INTRODUCTION TO DATA ELEMENT SPECIFIC RESULTS
Beta Test – Key Takeaways

• Data element performance
  o Reliability – Strong reliability across settings and across data elements – very few areas of concern and no ‘red flags’
  o Feasibility – Very little missing data

• Results of repeat assessment tests (a.k.a. ‘lookbacks’)
  o Repeat assessment of patient interview items on admission days 3, 5, and 7 showed very little variation in responses across days
  o Recording of presence/absence of chart review items based on chart information present at admission days 1, 3, 5, and 7 showed that the majority of information was present in the chart on day 1
## Completed Assessments for Each Module

<table>
<thead>
<tr>
<th>Module</th>
<th>Domains</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communicative, N=3121</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1-A2</td>
<td>Hearing and Vision</td>
<td>3065</td>
<td>98.2</td>
</tr>
<tr>
<td>A3-A7</td>
<td>Expression and Understanding</td>
<td>3063</td>
<td>98.1</td>
</tr>
<tr>
<td><strong>B1</strong></td>
<td>Brief Interview for Mental Status (BIMS)</td>
<td>3062</td>
<td>98.1</td>
</tr>
<tr>
<td>C</td>
<td>PROMIS Global Health</td>
<td>3049</td>
<td>97.7</td>
</tr>
<tr>
<td>D</td>
<td>Pain Interview</td>
<td>3031</td>
<td>97.1</td>
</tr>
<tr>
<td><strong>E1</strong></td>
<td>PHQ-2 to 9</td>
<td>3010</td>
<td>96.4</td>
</tr>
<tr>
<td><strong>E2</strong></td>
<td>PROMIS Depression</td>
<td>2986</td>
<td>95.7</td>
</tr>
<tr>
<td><strong>E3</strong></td>
<td>PROMIS Anxiety</td>
<td>2971</td>
<td>95.2</td>
</tr>
<tr>
<td>F1-2</td>
<td>Care Preferences (Involvement)</td>
<td>2980</td>
<td>95.5</td>
</tr>
<tr>
<td><strong>F3</strong></td>
<td>Care Preferences (chart review, Health Care Agent)</td>
<td>2923</td>
<td>93.7</td>
</tr>
<tr>
<td>G</td>
<td>Continence interview</td>
<td>2977</td>
<td>95.4</td>
</tr>
<tr>
<td>G</td>
<td>Continence chart review</td>
<td>2926</td>
<td>93.8</td>
</tr>
<tr>
<td><strong>B2</strong></td>
<td>Confusion Assessment Method (CAM)</td>
<td>2973</td>
<td>95.3</td>
</tr>
<tr>
<td>H</td>
<td>Behavioral Signs and Symptoms</td>
<td>2954</td>
<td>94.7</td>
</tr>
<tr>
<td>I</td>
<td>Medication Reconciliation Protocol</td>
<td>2951</td>
<td>94.6</td>
</tr>
<tr>
<td>J</td>
<td>Special Services, Treatments, and Interventions (SSTI)</td>
<td>2926</td>
<td>93.8</td>
</tr>
<tr>
<td><strong>All modules</strong></td>
<td>At least one response in each module</td>
<td>2795</td>
<td>89.2</td>
</tr>
<tr>
<td><strong>Non-communicative, N=548</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Staff Assessment of Mental Status</td>
<td>513</td>
<td>93.6</td>
</tr>
<tr>
<td><strong>D7-D9</strong></td>
<td>Pain</td>
<td>545</td>
<td>99.5</td>
</tr>
<tr>
<td><strong>E4</strong></td>
<td>Staff Assessment of Patient/Resident Mood (PHQ-9-OV)</td>
<td>501</td>
<td>91.4</td>
</tr>
<tr>
<td><strong>All modules</strong></td>
<td>At least one response in each module</td>
<td>481</td>
<td>87.8</td>
</tr>
</tbody>
</table>
## General Evaluation of Candidate SPADEs

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Potential for Improving Quality</th>
<th>Validity and Reliability</th>
<th>Feasibility for Use in PAC</th>
<th>Utility for Describing Casemix</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Interview</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>BIMS</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Expression and Understanding</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>CAM</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>PHQ-2 to 9</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>PROMIS Anxiety</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>SSTI</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Hearing and Vision</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Medication Reconciliation</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Behavioral Signs and Symptoms</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Staff Assessment of Pain</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>PROMIS Depression</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Continence (interview)</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>PHQ-9 OV</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Continence (chart)</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Care Preferences</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>PROMIS Global Health</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
<tr>
<td>Staff Assessment of Mental Status</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
<td>Light Blue</td>
<td>Deep Purple</td>
</tr>
</tbody>
</table>

Darker color indicates more positive evaluation.
BETA RESULTS

BY DATA ELEMENT CATEGORY
Beta Results Presented for Each Data Element

<table>
<thead>
<tr>
<th>FEASIBILITY</th>
<th>INTRARATER RELIABILITY</th>
<th>ASSESSOR FEEDBACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Time to complete</td>
<td>• Kappa</td>
<td>• Assessor survey</td>
</tr>
<tr>
<td></td>
<td>• Percent agreement</td>
<td>• Assessor focus groups and teleconferences</td>
</tr>
</tbody>
</table>

- Feasibility and interrater reliability were estimated for each setting separately and **overall** – combining across settings.

- We found very few differences between settings so most results are reported in this presentation for the **overall** sample.
COGNITIVE STATUS
## Cognitive Status: Candidate SPADEs

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Input Opportunities</th>
<th>Beta Inclusion Notes</th>
<th>Current Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brief interview for mental status (BIMS)</strong></td>
<td>Public Comment (PC)1, FY2018/CY2019 proposed rule</td>
<td>Included in Day 3-5-7 test</td>
<td>IRF-PAI, MDS</td>
</tr>
<tr>
<td><strong>Signs and symptoms of delirium (CAM)</strong></td>
<td>PC 1, FY2018/CY2019 proposed rule</td>
<td>Included in Day 3-5-7 test</td>
<td>LCDS, MDS</td>
</tr>
<tr>
<td><strong>Behavioral signs and symptoms</strong></td>
<td>PC 1, FY2018/CY2019 proposed rule; Alpha 2, PC2</td>
<td>Included in Day 3-5-7 test</td>
<td>MDS</td>
</tr>
<tr>
<td><strong>Expression and Understanding</strong></td>
<td>PC 1</td>
<td>Two versions tested</td>
<td>Expression of Ideas and Wants (OASIS*, IRF-PAI, LCDS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Included in Day 3-5-7 test</td>
<td>Understanding Verbal Content (OASIS*, IRF-PAI, LCDS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Speech Clarity (MDS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Makes Self Understood (MDS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ability to Understand Others (MDS)</td>
</tr>
<tr>
<td><strong>Staff assessment of mental status</strong></td>
<td>Alpha 2, PC2</td>
<td>For patients/residents unable to communicate</td>
<td>IRF-PAI, MDS</td>
</tr>
</tbody>
</table>
COGNITIVE STATUS

Brief Interview for Mental Status (BIMS)
Brief Interview for Mental Status (BIMS)

Feasibility and Reliability

**Time**

- 2.2 minutes overall to complete the BIMS

**Reliability**

- Excellent reliability
  - Percent agreement
    - Overall range: 94 – 98%
  - Kappa
    - Overall range: 0.83 – 0.93
Brief Interview for Mental Status (BIMS)  
Assessor Feedback

Support

• High clinical utility
• Helpful to assess cognition consistently across PAC and over time
• Low burden, esp. for HHA and IRF
• Staff already familiar with BIMS/similar assessments due to its common use in practice

Challenges/Concerns

• Frequent use of the BIMS leads to patient familiarization with recall words
• Administration relies on assessor speaking style and clarity; recall words must be clearly articulated
COGNITIVE STATUS
Confusion Assessment Method (CAM)
## Confusion Assessment Method (CAM)

### Feasibility and Reliability

<table>
<thead>
<tr>
<th>Time</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 1.4 minutes overall to</td>
<td>• Excellent (percent agreement)</td>
</tr>
<tr>
<td>complete the CAM</td>
<td>Overall range: 91 – 96%</td>
</tr>
</tbody>
</table>
Confusion Assessment Method (CAM)
Assessor Feedback

Support
• Moderately high in clinical utility
• Relatively low burden

Challenges/Concerns
• None noted
COGNITIVE STATUS
Behavioral Signs and Symptoms
## Behavioral Signs and Symptoms
### Feasibility and Reliability

<table>
<thead>
<tr>
<th>Time</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 1.4 minutes overall to complete the Behavioral Signs and Symptoms data element</td>
<td>• Excellent (percent agreement) Overall range: 95 – 100%</td>
</tr>
</tbody>
</table>
Behavioral Signs and Symptoms

Assessor Feedback

Support

• High clinical utility

• Important for effective transfers across PAC settings

• Behavioral problems commonly tracked in PAC settings

Challenges/Concerns

• Difficult to assess in home health settings during initial meeting

• Inconsistent documentation due to concerns about transferring patient/resident to another PAC setting
COGNITIVE STATUS
Expression and Understanding
Expression and Understanding
Feasibility and Reliability

Time
• 3-item set: 0.8 minutes overall
• 2-item set: 0.7 minutes overall

Reliability
• Excellent percent agreement for both versions
  • 3-item set, overall: 95%, 93%, 93%
  • 2-item set, overall: 89%, 86%

• Kappas, where calculated, are moderate for 3-item set
Expression and Understanding
Assessor Feedback

Support

• High clinical utility, especially for LTCH and SNF
• Important for facilitating patient transfer
• Assisted interpersonal connection with patient/resident
• Low burden, especially for HHA and IRF

Challenges/Concerns

• None noted
Questions & Break
MENTAL STATUS
# Mental Status: Candidate SPADEs

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Input Opportunities</th>
<th>Beta Inclusion Notes</th>
<th>Current Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-2 to 9</td>
<td>PC1, FY2018/CY2019</td>
<td>PHQ-2 (OASIS)</td>
<td>PHQ-2 (OASIS)</td>
</tr>
<tr>
<td></td>
<td>Alpha 1</td>
<td>prosped rule; Alpha 1</td>
<td>PHQ-9 (MDS)</td>
</tr>
<tr>
<td>PROMIS Depression</td>
<td>TEP/stakeholder</td>
<td>Two versions tested in Beta</td>
<td></td>
</tr>
<tr>
<td></td>
<td>review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROMIS Anxiety</td>
<td>Alpha 2, PC2</td>
<td>Two versions tested in beta</td>
<td></td>
</tr>
<tr>
<td>Staff assessment of mood (PHQ-9</td>
<td>Alpha 2, PC2</td>
<td>For patients/residents unable to communicate</td>
<td>MDS</td>
</tr>
<tr>
<td>Observational Version (OV))</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MENTAL STATUS

Patient Health Questionnaire-2 to 9 (PHQ-2 to 9)
# PHQ-2 to 9

## Feasibility and Reliability

### Time to Complete
- 2.3 minutes to complete the PHQ-2 to 9 overall
- 1.7 minutes for PHQ-2 only; 4.0 for those completing PHQ-9

### Reliability
- Excellent
  - Percent agreement:
    - Overall range: 96 – 100%
  - Kappa:
    - Overall range: 0.95 – 1.00
PHQ-2 to 9
Assessor Feedback

Support
• High clinical utility;
  Recognized importance of assessing mood

Challenges/Concerns
• Burdensome for staff and patients/residents
• Wording of some items (e.g., ‘hopeless’) was challenging for patients to understand
• 2-week lookback was difficult
MENTAL STATUS
PROMIS Depression
PROMIS Depression
Feasibility and Reliability

Time to Complete

- 2.2 minutes overall to complete the PROMIS Depression data element

Reliability

- Excellent
  - Percent agreement:
    - Overall range: 98 – 99%
  - Kappa:
    - Overall range: 0.96 – 0.99
PROMIS Depression Assessor Feedback

Support

• Wording does not require patient/resident to self-identify as “depressed”; value to alternative symptom labels

Challenges/Concerns

• Burdensome for staff and patients/residents

• Intro wording implies current experience of distress
MENTAL STATUS
PROMIS Anxiety
PROMIS Anxiety
Feasibility and Reliability

Time

• 2.2 minutes overall the PROMIS Anxiety data element

Reliability

• Excellent
  • Percent agreement:
    Overall range: 97 – 99%
  • Kappa:
    Overall range: 0.96 – 0.99
PROMIS Anxiety
Assessor Feedback

Support

• Wording does not require patient/resident to self-identify as “anxious”
• Moderately clinically useful

Challenges/Concerns

• Length of item set
MEDICAL CONDITIONS: PAIN
## Medical Conditions: Pain Candidate SPADEs

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Input Opportunities</th>
<th>Beta Inclusion Notes</th>
<th>Current Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain interview: presence, frequency, severity, effect on sleep, interference with therapy and non-therapy related activities, relief</td>
<td>PC1; Alpha 1, PC2</td>
<td>Two versions tested; included in Day 3-5-7 test</td>
<td>Presence (OASIS*, MDS) Frequency, severity, effect on sleep (MDS) Activities (OASIS, MDS)</td>
</tr>
<tr>
<td>Staff assessment of pain or distress</td>
<td>Alpha 2, PC2</td>
<td>For patients/residents unable to communicate</td>
<td>MDS</td>
</tr>
</tbody>
</table>
MEDICAL CONDITIONS: PAIN INTERVIEW
Pain Interview
Feasibility and Reliability

**Time**
- 2.6 minutes overall to complete the pain interview
- Time was shorter for those without pain (1.3 minutes)

**Reliability**
- Excellent for both versions tested
  - Percent agreement:
    - Overall range: 96 - 100%
  - Kappa:
    - Overall range: 0.93 - 0.99
Pain Interview
Assessor Feedback

Support

- High clinical utility, particularly items assessing function
- Low clinical burden

Challenges/Concerns

- None noted
IMPAIRMENTS
## Impairments: Candidate SPADEs

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Input Opportunities</th>
<th>Beta Inclusion Notes</th>
<th>Current Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to hear, ability to see</td>
<td>PC1, FY2018/CY2019 proposed rule</td>
<td></td>
<td>Ability to hear (OASIS*, MDS) Ability to see (OASIS, MDS)</td>
</tr>
<tr>
<td>Continence (bladder and bowel): Appliance use, frequency of events</td>
<td>Alpha 1, PC2</td>
<td>Recorded on admission Days 1, 3, 5 and 7; discharge date and discharge date -2</td>
<td>Appliance use (OASIS, MDS) Frequency of events (OASIS, IRF-PAI, LCDS, MDS)</td>
</tr>
<tr>
<td>Continence (bladder and bowel): Patient/resident perceived problem</td>
<td>Alpha 1, PC2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IMPAIRMENTS
Hearing and Vision
Hearing and Vision
Feasibility & Reliability

Time

• 0.6 minutes overall to complete the Ability to Hear and Ability to See data elements (0.3 minutes per data element)

Reliability

• Ability to Hear
  • Percent agreement: 84% overall
  • Kappa: 0.65 overall

• Ability to See
  • Percent agreement: 83% overall
  • Kappa: 0.56 overall
Hearing and Vision
Assessor Feedback

Support

• Highly clinically useful; important for facilitating effective transfer and for assessing patients’ baseline

• Lowest burden
  o HH may be easiest

Challenges/Concerns

• None noted
IMPAIRMENTS
Continence
Continence
Feasibility and Reliability

Time

- Chart Review:
  - 3.5 minutes to complete this section overall

- Interview:
  - 1.4 minutes to complete the interview data element overall

Reliability

- Chart review:
  - Percent agreement:
    Overall range: 74-100%
  - Kappa, where computed, fair to moderate: 0.55 - 0.79

- Interview:
  - Percent agreement:
    Overall range: 98-99%
  - Kappa:
    Overall range: 0.96 - 0.98
Continence
Assessor Feedback

Support
- Clinically relevant to decision making
- Considered important for facilitating transfer

Challenges/Concerns
- Necessary to consult multiple sources
- Inadequate information in charts
- Incongruity between multiple data sources (including patients)
- Variation in documentation by PAC setting
SPECIAL SERVICES, TREATMENTS, AND INTERVENTIONS (SSTI)
### Special Services, Treatments and Interventions: Candidate SPADEs

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Input Opportunities</th>
<th>Beta Inclusion Notes</th>
<th>Current Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritional approaches: IV or feeding tube, diet</td>
<td>PC1, FY2018/CY2019 proposed rule</td>
<td>Recorded on admission Days 1, 3, 5 and 7; discharge date and discharge date -2</td>
<td>Parenteral/IV (OASIS, IRF-PAI, LCDS, MDS) Feeding tube (OASIS, IRF-PAI, MDS) Mechanically, altered diet, therapeutic diet (MDS)</td>
</tr>
<tr>
<td>Services and treatments: Cancer, respiratory, other</td>
<td>PC1, FY2018/CY2019 proposed rule</td>
<td>Recorded on admission Days 1, 3, 5 and 7; discharge date and discharge date -2</td>
<td>Chemotherapy, radiation, suctioning, tracheostomy, transfusions, IV Access (MDS) Oxygen (OASIS*, MDS) Invasive mechanical ventilator, BiPAP/CPAP (OASIS*, LCDS, MDS) IV meds, Dialysis (LCDS, MDS)</td>
</tr>
</tbody>
</table>
Special Services, Treatments and Interventions
Feasibility & Reliability

**Time**
- 3.3 minutes overall to complete this data element set
- Minimal setting differences

**Reliability**
- Percent agreement:
  - Overall range: 79-100%
- Kappas, where computed, fair to moderate: 0.57 – 0.78
Support

• Important to track especially for transfers
• High clinical utility except in IRF

Challenges/Concerns

• Difficult to collect information from charts
• Ease and complexity of collection varied across systems
• Poor documentation in HH
• Low clinical utility in IRF
Questions & Break
OTHER CATEGORIES
Other Categories: Candidate SPADEs

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Input Opportunities</th>
<th>Beta Inclusion Notes</th>
<th>Current Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication reconciliation</td>
<td>Alpha 1, Alpha 2,</td>
<td>Medicine classes taken (MDS)</td>
<td>Drug Regimen Review (OASIS, IRF-PAI, LCDS, MDS)</td>
</tr>
<tr>
<td></td>
<td>PC2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care preferences: Decision making preferences,</td>
<td>Alpha 1, Alpha 2,</td>
<td>Involvement in care decisions (MDS)</td>
<td></td>
</tr>
<tr>
<td>designated health care agent</td>
<td>PC2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROMIS Global Health</td>
<td>PC2, TEP2</td>
<td>Two versions tested</td>
<td></td>
</tr>
</tbody>
</table>
OTHER CATEGORIES
Medication Reconciliation
Medication Reconciliation
Feasibility & Reliability

Time

• 3.2 minutes overall to complete the Medication Reconciliation data element

Reliability

• Percent agreement:
  Overall range: 79-96%

• Kappas, where computed, fair to moderate: 0.42 – 0.89
  • Higher for classes taken, lower for communication (esp. HH)
Medication Reconciliation
Assessor Feedback

Support
• Considered to have strong clinical utility
• Particularly useful in Home Health
• High utility for transfers, particularly for ensuring patient safety

Challenges/Concerns
• High assessment burden
• Challenging to understand discrepancies
• Documentation on discrepancy communication and follow-up rare
OTHER CATEGORIES

Care Preferences
Care Preferences
Feasibility & Reliability

Time

• 1.5 minutes to complete the Care Preferences data element overall
• Minimal setting differences

Reliability

• Percent agreement range:
  Overall range: 83 - 99%
• Kappa:
  Overall range: 0.56 - 0.96
• Lowest for whether patient had a health care agent
Care Preferences
Assessor Feedback

Support
• High clinical relevance, particularly during care transitions
• Low assessor burden

Challenges/Concerns
• Within item set, burden highest for healthcare agent question
• Legal/formal documentation of healthcare agent rarely present, esp. in HH
OTHER CATEGORIES
Global Health
Global Health
Feasibility & Reliability

Time
• 3.5 minutes to complete the Global Health data element overall
• Minimal setting differences

Reliability
• Excellent reliability
  • Percent agreement:
    Overall range: 95 - 98%
  • Kappa:
    Overall range: 0.95 - 0.99
Global Health
Assessor Feedback

Support
• Somewhat to moderately clinical utility

Challenges/Concerns
• Some questions inappropriate or irrelevant for PAC patient/resident populations
• Difficult to report “average” pain, particularly in IRFs where pain varies pre-/post-operation
NON-COMMUNICATIVE DATA ELEMENTS
Staff Assessments of Mental Status, Mood, and Pain
Staff Assessment of Mental Status
Feasibility & Reliability

Time

• 2.6 minutes to complete the Staff Assessment of Mental Status overall

Reliability

• Excellent reliability
  • Percent agreement:
    Overall range: 93 - 98%
  • Kappa:
    Overall range: 0.74 - 0.94
Staff Assessment of Mood (PHQ-9 OV)

Feasibility & Reliability

Time

• 3.5 minutes overall to complete the PHQ-9 OV

Reliability

• Excellent reliability
  • Percent agreement:
    Overall range: 92 - 99%
  • Kappa:
    Overall range: 0.91 - 0.98
Staff Assessment of Pain in
Feasibility & Reliability

Time

• 2.4 minutes overall to complete the Staff Assessment of Pain

Reliability

• Excellent reliability
  • Percent agreement:
    Overall range: 89 - 98%
  • Kappa:
    Overall range: 0.81 - 0.90
Non-Communicative Data Elements (Overall)
Assessor Feedback

Support

• Moderate clinical utility

Challenges/Concerns

• Slightly difficult to collect and more burdensome than other SPADEs

• Many questions not applicable to patients/residents who are truly non-communicative

• For patients/residents who could be considered communicative/non-communicative, it was unclear which to do
Wrap up

• RAND/CMS is collecting input on SPADEs tested in beta and presented in this forum.

• Please submit your input by sending an email to spadeforum@rand.org.

• Comments received by close of business on January 15th, 2019 will be officially reviewed and summarized. A verbatim comment summary report will be posted on the CMS website. We will not be responding to the input.

• Thank you for attending!
Questions