Uniform Patient Assessment for Post-Acute Care

EXECUTIVE SUMMARY

Report Editors

Andrew Kramer, MD and Danielle Holthaus, BS

Report Authors

Eric Coleman, MD, MPH, Danielle Holthaus, BS, and Andrew Kramer, MD
University of Colorado at Denver and Health Sciences Center

Barbara Gage, PhD and Jeremy Green, BA
RTI, International

Debra Saliba, MD, MPH
UCLA, VHA, and RAND Health

Alan M. Jette, PhD, PT and Stephen M. Haley, PhD, PT
Boston University

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Purpose

Care fragmentation, unsafe care transitions, and the inability to determine the most cost-effective settings for patients discharged to post-acute care (PAC) are all compounded by lack of a Uniform Patient Assessment. This project provides recommendations to CMS on the development of a Uniform Assessment Instrument for PAC to be completed at hospital discharge and ultimately integrated with PAC assessments. The Assessment Instrument is intended to cover the population admitted to all inpatient PAC settings (skilled nursing facilities, inpatient rehabilitation facilities, and acute long-term care hospitals), as well as residential-based PAC (home health agencies, outpatient programs). The three purposes of the PAC Assessment Instrument are: 1) placement decision-making; 2) enhancement of safety and quality of care transitions through transmission of core information to a receiving provider; and 3) provision of baseline information for longitudinal follow-up of health and function. The report was prepared by seven national PAC experts based on a review of existing instruments and literature pertinent to public and private programs, as well as discussions with other experts and CMS-recommended leaders in the health care industry. While no such review could possibly be exhaustive, every attempt was made to follow referrals and/or identify information on assessments of relevance to these purposes.

Major Findings

1. None of the three existing CMS assessment tools for PAC (MDS, OASIS, IRF-PAI) adequately covers the spectrum of patients and the necessary domains to be used across settings, and mapping across instruments is complex.

2. Past and current uniform assessment instruments (e.g., the Uniform Assessment Instrument (UNAI), Continuity of Care Record (CCR), VA Geriatrics and Extended Care (GEC) Referral Form, Health Outcomes Survey (HOS) Assessment, and others) cover some domains well, but do not yield precise measures across all patients in selected domains.

3. For the purposes of discharge planning, care transitions, and outcome assessment, a mixture of patient/proxy report measures and provider-based measures exist that could be combined from different sources to optimize data validity and minimize burden.

4. In the functional assessment domains, which are essential for uniform PAC assessment, measurement methods are in use by health systems that drastically reduce burden while improving precision of measurement across the full spectrum of impairment. These methods, termed Item Response Theory (IRT) and Computer Adaptive Technology (CAT), target the questions for an individual based on the responses to former questions so that only some items from a larger pool are answered, while scoring all persons on the same metric (Appendix 1).

Recommendations

We recommend a two-staged development activity, lasting about one year, leading to an instrument that is ready for use in national demonstrations.

Stage 1: Instrument Development
1. Specify Domains: Thirty-one (31) domains are recommended for the three purposes of the Uniform Assessment Instrument (Appendix 2). Although these domains were chosen based on evidence and consensus from earlier studies, a final expert panel review is recommended to assure that they fully cover the purposes of the uniform assessment instrument without excess burden.

2. Testing Functional Measurement Using IRT/CAT: The Activity Measure for Post-Acute Care (AM-PAC), developed by Boston University for functional domains and in use by Merck, HealthSouth, Kaiser Permanente of Northern California, and SeniorMetrix, could be used to demonstrate IRT/CAT for functional assessment. IRT/CAT, which would be most beneficial for measuring function, could be integrated with measures for other domains as they become available.

3. Select/Develop Measures for Each Domain: Tested and reliable measures for many domains can be adapted from existing publicly available instruments (e.g., VA GEC Referral Form, HOS) or published domain-specific measures. For some domains, additional item development will be necessary, which will require testing questions on small samples to assure both validity and reliability. Crosswalks to existing PAC instruments will be considered during measure development.

4. Automation Platforms and Transmission: We recommend a web-based approach such that the transmitting hospital can log on and conduct the assessment, which can then be accessed by the receiving provider. However, other platforms for real-time electronic data generation and transmission could be evaluated and considered in this phase.

5. Integrated Uniform Assessment Instrument: A combined uniform assessment instrument would be generated from these concurrent development and testing efforts that includes information for all domains.

Stage 2: Beta Testing
1. A sample of hospitals would be recruited and trained to complete the uniform assessment on all discharged Medicare beneficiaries. Local PAC providers would be trained to access the generated information, and development would begin on integrating the assessment information into PAC provider assessments.

2. All measures for all domains would be refined, including the metrics and item pools that are used for functional assessment using IRT/CAT.

3. Patient responses would be compared with proxy responses for patient/proxy report items.

4. Software and technology would be refined to assure that the completion, transmission, and receipt of the assessment are as efficient as possible.

5. Care transitions would be studied for improved safety and quality.

6. Longitudinal follow-up at fixed intervals for outcome measures would be conducted to examine outcomes for different patient conditions and episodes of care.

Following beta testing, the Uniform PAC Assessment would be ready for use in national demonstration activities. By uniformly characterizing patients at hospital discharge, transmitting uniform information to receiving PAC providers, and following outcomes using the same measures over time, CMS would be able to examine quality and cost for comparable patients across PAC episodes.

APPENDIX 1: EXAMPLE OF ITEM RESPONSE THEORY (IRT) AND COMPUTER ADAPTIVE TECHNOLOGY (CAT)

Boston University devoted six years to developing, evaluating, and refining the Activity Measure for Post-Acute Care (AM-PAC), using Item Response Theory (IRT) and Computer Adaptive Technology (CAT), to examine functional status outcomes across the full spectrum of PAC settings. The AM-PAC uses the World Health Organization's International Classification of Functioning, Disability and Health (ICF). As an example, the Physical & Movement Activity domain includes 101 items pertaining to basic physical activities such as bending, walking, carrying, or climbing stairs. The following patient case illustrates how the AM-PAC CAT works. In this scale, we assume that the midpoint of the scale is 50, and this serves as the initial (default) score estimate prior to the CAT administration. We set the CAT precision stopping rule as a 95% CI < 3.0; CAT questions can be stopped based on the number of items or the desired precision of the estimate.

A 74-year old female is recovering from congestive heart failure and is being discharged home after an eight-day hospital stay. She has mild arthritis and is leaving the hospital able to only walk short distances. She is scheduled to have home care visits to assist her with mobility and self-care activities. Prior to leaving the hospital, she is asked a series of CAT-generated AM-PAC questions regarding her current mobility status. Subsequently, she is also asked to respond to CAT-generated AM-PAC questions by her home health care provider to update her functional mobility changes. The results from these two functional assessments are illustrated in the table below.

Physical Functioning CAT at Hospital Discharge			Physical Functioning CAT at Follow-up (3 months post-hospital discharge)		
Question	Response	Score Estimate and (SE)	Question	Response	Score Estimate and (SE)
Standing up from a chair?	Lot of difficulty	38.4 (7.9)	Standing up from a chair?	No difficulty	44.3 (8.4)
Standing for one minute?	Little difficulty	36.5 (5.4)	Walking outdoors? (100 meters)	No difficulty	56.3 (7.3)
Walking indoors (50 meters)?	Lot of difficulty	35.9 (4.3)	Lifting 10-pound object?	Little difficulty	59.2 (5.3)
On and off toilet?	Little difficulty	36.2 (3.4)	Carrying grocery bag?	No difficulty	62.2 (4.1)
Flight of stairs?	Unable	35.6 (2.9)	Three flights of stairs?	Little difficulty	60.4 (3.0)
Final Hospital Discharge Physical Functioning Score Estimate		**35.6 (2.9)**	**Final 3-month Post-hospital Discharge Physical Functioning Score Estimate**		**60.4 (3.0)**

Note that her responses at hospital discharge indicate that she was functioning at a low level of function, and therefore the CAT provided AM-PAC questions that addressed these low levels of mobility. At the 3-month follow-up assessment, her responses to the AM-PAC clearly indicated that she was no longer limited in basic mobility and had progressed considerably in physical functioning. The CAT at this phase tailored items in response to the higher levels of functioning noted by her responses and provided an assessment using more challenging items, yet the two assessments were scored on the same *underlying metric.* During the 3 month period she improved from a 35.6 score to a 60.4 functional level on the AM-PAC Physical & Movement Scale. The CAT provided an estimate of functional ability after she responded to each item, and continued that estimation until a stop-rule based on number of items or precision was satisfied. By adapting to her responses, the CAT yielded questions that were designed especially for her estimated level of ability, and thus provided a precise estimate of her function at each time point with fewer questions than a fixed-length form where she would have been asked the same questions each time.

APPENDIX 2: RECOMMENDED DOMAINS FOR THE THREE PURPOSES OF THE UNIFORM ASSESSMENT INSTRUMENT

Domains	**Discharge Placement**	**Care Transitions**	**Outcomes/ Quality**	**Respondent***
Goals of care	X	X		P
Specialized rehab care needs	X			H
Patient's residence & with whom	X		X	P
Meets Medicare criteria for homebound	X			H
Active problem list	X	X		H
Medication list	X	X		H
Allergies/intolerances		X		H
Resuscitation status/advance directive/DPAHC		X		P
Discharge instructions/outstanding diagnostic tests		X		H
Cognitive functional status	X	X		P
Physical functioning/mobility	X	X	X	P
Activities of Daily Living/self-care	X	X	X	P
IADLs/Advanced cognitive	X	X	X	P
Social functioning	X		X	P
Premorbid Function	X	X		P
Self-rated health status		X	X	P
Pain status		X		P
Depression	X	X		P
Skin integrity		X		H
Sensory deficits	X	X		P
Dietary needs		X		H
Continence	X	X		P
Fall risk		X		H
Services receiving in home	X	X		H
DME receiving/equipment	X	X		P, H
Able and willing caregiver	X	X		P
Ethnic or cultural considerations/language	X	X		P
Immunizations and most recent PPD test result		X		H
Infectious precautions	X			H
Insurance/financial resources	X	X		P
Basic demographics; age, gender	X	X		H

*P= Patient/Proxy; H=Populated by hospital database or hospital staff