



ACUMEN

**Skilled Nursing Facility Payment Models
Technical Expert Panel
Summary Report**

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1 INTRODUCTION

This report summarizes the technical expert panel (TEP) established by Acumen, LLC to discuss the development of alternative payment models for Medicare Part A services in the skilled nursing facility (SNF) setting. The TEP is part of Acumen's ongoing effort as part of a contract with the Centers for Medicare & Medicaid Services (CMS) to identify, evaluate, and propose potential alternatives to the current SNF Prospective Payment System (PPS). The TEP meeting summarized in this report was held in order to obtain feedback on a preliminary alternative methodology for the SNF PPS, with panelists providing comments and recommendations on payment system options for SNF services. The SNF Payment Models TEP was held on June 15, 2106, and the discussion focused on the results of Acumen's work to date.

Beginning in 1998, Medicare has paid for services provided by SNFs under the Medicare Part A benefit on a per diem basis through the SNF PPS. Recommendations to change the reimbursement model have come from multiple sources, including the Medicare Payment Advisory Commission (MedPAC), the Office of the Inspector General (OIG), and research conducted by The Urban Institute that was commissioned by CMS. These reports advocate for a new payment model to promote individualized care for residents by using specific patient characteristics and care needs to ensure accurate payments for all services. The existing literature on the subject was documented by Acumen in a literature review during the base year. To address these opportunities for improvement, CMS is considering alternative payment approaches to strengthen the overall SNF PPS system. The project aims to:

- Develop potential payment alternatives for SNF services that promote payment accuracy and positive resident outcomes
- Assess the impact of alternative payment models on SNF residents, SNF providers, and the overall Medicare system
- Recommend adjustments for adoption by CMS

Acumen will use the feedback provided by TEP panelists and summarized in this report to identify opportunities for improvement that can be incorporated as the project moves forward. This report begins by outlining the objectives, methods, and composition of the TEP panel. It then summarizes the discussion held by the TEP panelists, including recommendations made to Acumen. Finally, the report explains next steps Acumen will take to incorporate the TEP panel's recommendations into ongoing and future research.

2 PANEL OVERVIEW

This section presents an overview of the SNF payment models TEP. Section 2.1 summarizes the objectives and scope of the TEP, Section 2.2 describes the structure of the TEP, Section 2.3 describes the materials provided to panelists, and Section 2.4 contains a list of all TEP panelists and brief descriptions of their backgrounds.

2.1 Objectives

The TEP had three main objectives:

- Review and discuss the proposed features of an alternative payment system.
- Assess whether the proposed payment system will achieve the intended goals of promoting payment accuracy and positive resident outcomes.
- Assess the impact of the proposed payment system on residents, providers, and the overall Medicare system.

To accomplish these objectives, the TEP reviewed the research exploring alternative approaches for each of the SNF payment system components, and made recommendations about the relative strengths and limitations of these approaches. Moreover, the TEP offered suggestions for refinements to these approaches.

This TEP was focused on the broad features of an alternative payment system. As the details of the payment system are further developed, Acumen will facilitate additional opportunities for stakeholder involvement.

2.2 Structure

The TEP was held on June 15, 2016, from 8:30 a.m. to 5:00 p.m., at the MITRE building in Windsor Mill, Maryland. The TEP was organized into a series of topic-specific discussion sessions. Throughout the day, panelists engaged in a structured discussion about SNF payments guided by a moderator unaffiliated with the project team. To motivate the discussion, Acumen project team members presented empirical results pertaining to specific aspects of payment and the moderator posed relevant discussion questions. Table 1 shows the agenda for the day of the TEP.

Table 1: TEP Agenda

Session	Time	Topic
Session 1	8:30 to 9:00 AM	Introductions and Overview of Payment System Alternatives
Session 2	9:00 to 10:30 AM	Options for Revising Therapy Component (PT+OT)
Session 3	10:30 to 11:45 AM	Options for Creating Speech-Language Pathology Component
Lunch	11:45 AM to 12:45 PM	N/A
Session 4	12:45 to 1:45 PM	Options for Creating Non-Therapy Ancillary Component
Session 5	1:45 to 2:30 PM	Options for Revising Nursing Component
Break	2:30 to 2:45 PM	N/A
Session 6	2:45 to 3:45 PM	Exploring Alternative Features of a Payment System
Session 6	3:45 to 4:45 PM	Open Discussion

2.3 Materials

Prior to the TEP, Acumen provided panelists with an agenda, a TEP charter stating the scope and duties of the panel, a list of TEP members, a logistics document, the presentation slides, and a background document. The agenda outlined the scheduled discussion sessions, with a description of the objective of the session, the discussion topics, and discussion questions for review. The discussion questions can be found in Appendix A. Panelists were also encouraged to read the public report published at https://www.cms.gov/medicare/medicare-fee-for-service-payment/snfpps/downloads/summary_report_20140501.pdf, which summarizes the analysis and findings from the first phase of the project team’s research.

2.4 Members

The TEP was composed of independent researchers and representatives from provider and consumer stakeholder organizations.

Table 2 lists the TEP panelists and their organizational affiliation in alphabetical order.

Table 2: TEP Panelists

Name	Organizational Affiliation
Alice Bell <i>PT, DPT, GCS</i>	Vice President of Clinical Services and Care Delivery Design, Genesis Rehab Services
Christine Bishop <i>PhD</i>	Professor of Labor Economics, Heller School for Social Policy and Management, Brandeis University
Tara Cortes <i>PhD, RN, FAAN</i>	Executive Director, Hartford Institute of Geriatric Nursing
Toby Edelman <i>Ed.M, JD</i>	Senior Policy Attorney, Center for Medicare Advocacy
Peggy Gourgues <i>MA</i>	Chief Operating Officer, Reliant Rehabilitation
Renee Kinder <i>MS, CCC-SLP, RAC-CT</i>	Speech Language Pathologist, Encore Rehabilitation
Andrew Kramer <i>MD</i>	Chief Executive Officer, Providigm, LLC

Name	Organizational Affiliation
Judi Kulus <i>RN, MSN MAT, NHA, RAC-MT, DNS-CT, QCP</i>	Vice President of Curriculum Development, American Association of Nurse Assessment Coordination
Natalie Leland <i>PhD, OTR/L, BCG, FAOTA</i>	Professor, University of Southern California (USC) Division of Occupational Science and Occupational Therapy and the USC Davis School of Gerontology
Cari Levy <i>MD, PhD</i>	Associate Professor of Medicine, University of Colorado Health Sciences Center
Deanna Okrent <i>MPA, MA</i>	Health Policy Advisor, Consumer Voice
Mary Ousley <i>RN</i>	President, Ousley & Associates
William Scanlon <i>PhD</i>	Consultant, West Health Institute
Aaron Tripp <i>MSW</i>	Director of Long Term Care Policy and Analytics, LeadingAge
Douglas Wissoker <i>PhD</i>	Economist and Senior Fellow, Urban Institute

3 DISCUSSION AND RECOMMENDATIONS

This section summarizes the discussions held during the TEP and highlights the recommendations provided by panelists. The TEP included a brief introductory session, five discussion sessions covering topics related to developing an alternative SNF payment system, and an open discussion session at the end of the day for observers to offer their feedback. For the five content sessions (Sessions 2-6), the following sections present the session's background and context, describe the discussion, and compile the panelists' recommendations. The recommendations below are not intended to represent the consensus view of all TEP panelists, but rather the suggestions of individual panelists. Where relevant, the sections below also summarize comments from observers made during the open discussion that related to the session's discussion topics.

The TEP contained the following content sessions, summarized below:

- [Session 2](#): Options for Revising Therapy Component (PT+OT)
- [Session 3](#): Options for Creating Speech-Language Pathology Component
- [Session 4](#): Options for Creating Non-Therapy Ancillary Component
- [Session 5](#): Options for Revising Nursing Component
- [Session 6](#): Exploring Alternative Features of a Payment System

3.1 Session 2: Options for Revising Therapy Component (PT+OT)

This session's objective was to describe the reasons for creating two therapy components and obtain feedback on proposed payment groups for physical and occupational therapy. This session of the presentation consisted of three major topics:

- motivation to separate therapy into PT+OT and speech-language pathology (SLP) components
- selection of resident characteristics to determine PT+OT payments
- description of proposed PT+OT resident groups

Acumen explained that PT+OT costs and SLP costs are not closely correlated, therefore it may be advisable to create separate components for these therapy modalities that use different criteria to determine payment. Next, the project team identified three sets of resident characteristics that were strong predictors of PT+OT costs per day: clinical information from the prior inpatient stay and SNF stay, functional status, and cognitive status. Finally, Acumen described how these characteristics were used to create 23 resident groups for PT+OT payment. Panelists were asked to consider the following questions:

- (i) Are the independent variables selected appropriate predictors of PT+OT? Are there sources of clinical or other information that would be predictive of PT+OT costs and were not already considered?
- (ii) Is the proposed Functional Measure a better indicator of PT+OT use than the existing ADL score? Are there any proposed refinements to the Functional Measure?
- (iii) Is the item B0700 (Makes Self Understood) an appropriate measure of how cognitive status affects PT+OT use? Are there other measures of cognition that should be explored?

3.1.1 Predictors of PT+OT Costs

Acumen described how three sets of resident characteristics – clinical information from the prior inpatient stay, functional status, and cognitive status – were used to predict PT+OT costs per day and build case-mix groups for PT+OT payment. Diagnostic information from the prior inpatient stay was used to group residents into five broad clinical categories for PT+OT payment. Three late-loss activities of daily living (ADLs) – transfer, eating, and toileting – were used to construct a functional measure. “Makes Self Understood,” an item on the Minimum Data Set (MDS) assessment version 3.0, was selected as an indicator of cognitive status.

Discussion

TEP panelists discussed whether the prior inpatient stay was an appropriate source of diagnosis information when classifying SNF residents for payment purposes. One panelist stated that the MS-DRGs from the inpatient stay were not strong predictors of post-acute care. Acumen responded that the clinical information from the prior inpatient stay predicted PT+OT costs in the SNF as well as or better than diagnostic information from the SNF stay. Participants also discussed whether it was feasible for SNFs to obtain diagnostic information from the prior inpatient setting. Acumen said this information could be collected by adding items to the MDS and/or SNF claims rather than by requiring SNFs to obtain the information from another care setting. One panelist suggested creating separate clinical categories for residents who received hip replacements and residents who received knee replacements, explaining that rehabilitation following hip replacement is typically less intensive, especially with the advent of less-invasive hip replacement procedures.

Panelists also offered feedback on other predictors of PT+OT costs. Participants questioned whether MDS item B0700: Makes Self Understood was an appropriate cognitive measure. They said a resident may have high cognitive function but have difficulty communicating, or vice-versa, therefore other tools that assess cognition more directly, such as the Brief Interview for Mental Status (BIMS) or Cognitive Performance Scale (CPS), may be more appropriate measures. One panelist suggested exploring the Cognitive Function Scale (CFS), a cognitive measure presented in a recently published paper by Kali Thomas, David Dosa, Andrea Wysocki, and Vincent Mor (*The Minimum Data Set 3.0 Cognitive Function*

Scale). Several panelists said Acumen should examine the relationship between therapy provided and changes in a resident's function over a stay. Acumen reported that this had been investigated and that there was limited change in function over a stay. Additionally, using clinical outcomes as a payment factor may be appropriate in value-based purchasing initiatives, rather than in the prospective payment system. One panelist said mobility measures should be included when assessing function. Another panelist suggested testing if a more exhaustive set of explanatory variables would have greater ability to predict PT+OT costs compared to the proposed payment component. Acumen said the project team has considered this approach but would have to balance any additional predictive accuracy gained against the added complexity of having many determinants of payment. Another participant asked how the proposed PT+OT payment component would account for comorbidities. Acumen responded that comorbidities were tested, but were found to be weak predictors of PT+OT costs. One participant said the payment system should account for clinical differences associated with three resident profiles: short-term, intense rehabilitation; longer-term, lower-intensity rehabilitation; and no rehabilitation. Several participants suggested identifying characteristics to further divide the "Medical Management" resident group for PT+OT payment, given its large size.

Finally, some panelists said PT and OT utilization should be predicted and paid for using separate components, expressing concern that combining the two services into one component may not adequately pay for residents who require both disciplines.

Recommendations

- Elaborate on the operational and logistical process to explain how diagnostic information from the prior inpatient stay could be used to classify SNF residents for payment purposes.
- Consider creating separate clinical categories for residents who received hip replacements and residents who received knee replacements.
- Consider alternative measures of cognitive status such as the Brief Interview for Mental Status (BIMS), Cognitive Performance Scale (CPS), or Cognitive Function Scale (CFS) from Thomas et al. (2015).
- Consider including items assessing mobility in the functional measure.
- Consider predicting PT+OT costs with a more exhaustive set of explanatory variables.
- Ensure payment system accounts for clinical differences associated with three resident profiles: short-term, intense rehabilitation; longer-term, lower-intensity rehabilitation; and no rehabilitation.
- Investigate resident characteristics to further divide the "Medical Management" resident group for PT+OT payment.

- Explore whether it is appropriate to predict and pay for PT and OT utilization using separate components.

3.1.2 PT+OT Utilization Data

Acumen provided details on how the dependent variable was constructed. The project team converted charges from SNF claims to costs using the cost-to-charge ratio from facility cost reports. Stay costs were then divided by the utilization days in a stay to determine average costs per day. For the PT+OT payment component, Acumen then used selected resident characteristics to predict PT+OT costs per day.

Discussion

Panelist discussion focused on the reliability of existing resource utilization data. One panelist said cost report data are not reliable. Acumen said the reliability of cost report data was verified by comparing charges on the claims for a given cost reporting period to total charges recorded on the corresponding cost report. In many cases, the charges from the claims and the charges from the cost reports were identical or nearly identical. Additionally, the therapy minutes reported on the claims were converted to costs using average wages for different types of staff. These costs were correlated with the actual costs reported on the claims.

Other panelists discussed whether it was appropriate to use existing utilization data to build a payment system, even if it accurately reflects current patterns of resource use. Panelists said current utilization data may not reflect true clinical need for services. For example, they pointed out that there is a high degree of clustering around therapy minute thresholds that are used to determine payment in the current SNF PPS. Participants said Acumen should consider whether PT+OT payments should be based on therapy utilization patterns for all providers or utilization among providers with desired clinical outcomes. One participant said that because the *Jimmo v. Sebelius* settlement may not be fully implemented, therapy utilization levels in current data may be lower than contemplated in the settlement. Acumen said that the statute requires using existing relative resource utilization to determine payment for different case-mix groups; the payment system can be updated in the future to reflect changes in resource use resulting from the implementation of the *Jimmo* settlement or any other factors. One panelist mentioned that the current payment system has led to clustering of therapy utilization around thresholds that correspond to payment increases, and that the resulting lack of variation in therapy costs limits the ability of the regression model to predict relative resource utilization.

Recommendations

- Consider ways to adjust for patterns in current resource utilization data that may not reflect clinical need, e.g., clustering around therapy minute thresholds.

- Consider whether to base PT+OT payment on resource utilization among all providers or utilization patterns for providers with desired clinical outcomes.
- Consider future updates to the payment system to reflect changes in resource use, e.g., post-implementation of the *Jimmo v. Sebelius* settlement.

3.2 Session 3: Options for Creating Speech-Language Pathology Component

This session's objective was to obtain feedback on proposed Speech-Language Pathology (SLP) resident groups. This session of the presentation consisted of two major topics:

- selection of resident characteristics to determine SLP payments
- description of SLP resident groups

Acumen identified two sets of resident characteristics that were strong predictors of speech-language pathology (SLP) utilization: clinical reasons for the prior inpatient stay and speech-related items on the MDS assessment. Acumen then described how these characteristics were used to build 10 resident groups for SLP payment. During this session, Acumen asked panelists to discuss the following questions:

- (i) Given the distinct resident groups for SLP and PT+OT resulting from the empirical analysis, is it appropriate to create two separate components for SLP and PT+OT?
- (ii) Besides the clinical categories considered, are there other types of acute inpatient stays that should be examined?
- (iii) Are there other items on the MDS that were not already tested, but potentially predictive of SLP costs?
- (iv) Are there other comorbidities or diagnoses that should be considered? Are there other services in residents' history that should be considered?

3.2.1 Predictors of SLP Utilization

Acumen described how two sets of resident characteristics – clinical information from the prior inpatient stay and speech measures from the MDS assessment – were used to predict SLP costs per day and build case-mix groups for SLP payment. Diagnostic information from the prior inpatient stay was used to group residents into two broad clinical categories for SLP payment. Acumen identified three speech measures based on their superior ability to predict SLP costs: B0700: Makes Self Understood, K0100Z: No Sign of Swallowing Disorder, and G0110H1: Eating Self-Performance ADL.

Discussion

Panelists discussed whether it was appropriate to classify residents for SLP payment based on the diagnosis from the prior inpatient stay. One panelist said this approach would miss residents who manifest a neurologic condition after SNF admission. The panelist also said

classifying residents according to the MS-DRG from the inpatient stay could miss residents who have chronic, progressive neurologic conditions, such as dementia, Parkinson’s disease, or Alzheimer’s. For example, the primary reason for an inpatient stay could be an acute event (such as a fall) related to a neurologic condition, but the MS-DRG could relate to the immediate cause of the hospitalization (e.g., a hip fracture) rather than the neurologic condition that triggered the acute event. Other panelists said that when the MS-DRG does not reflect chronic neurologic conditions, this information can be found in other diagnosis information from the prior inpatient stay or on outpatient claims. Other TEP members, however, said chronic neurologic conditions, particularly dementia, may be underreported on outpatient claims.

Panelists also discussed other predictors of SLP utilization. One TEP member said the proposed payment component reflected an overly simplistic view of SLP services. Panelists suggested investigating resident characteristics to further divide the 94% of residents currently placed in the “Other” category for SLP payment. Suggested conditions to explore include laryngeal cancer, Parkinson’s disease, depression, dementia, and delirium. One panelist said the care area assessment in Section V of the MDS should be explored for possible predictors of resource utilization. Another participant reiterated the comment from the prior session about the limitations of MDS item B0700 to capture cognitive status, as it is mostly a communication measure. Another panelist said if an alternative payment system mitigates incentives for the overprovision of therapy, resident characteristics such as age or comorbidities that are not currently strong predictors of utilization for certain services may become good predictors. Therefore, it may be reasonable to include these characteristics in an alternative payment system even if they currently have low predictive ability.

Recommendations

- Consider expanding sources of diagnosis information used to classify residents for payment purposes beyond the MS-DRG from the prior inpatient stay.
- Explore ways to further divide residents that fall into the “Other” clinical category for SLP payment, including chronic neurologic conditions and laryngeal cancer.
- Investigate the care area assessment in Section V of the MDS for possible predictors of resource utilization.
- Consider including resident characteristics that are not currently highly predictive of resource utilization because of existing payment incentives but could become predictive when incentives for overprovision of therapy are mitigated.
- When testing the impact of an alternative payment system on various types of residents and facilities, consider the impacts on residents who receive antibiotics,

ventilator treatment, or a tracheostomy; residents with multiple comorbidities; and small or isolated providers.

3.3 Session 4: Options for Creating Non-Therapy Ancillary Component

The session's objective was to obtain feedback on proposed NTA payment groups. This session of the presentation consisted of three primary topics:

- motivation to create separate NTA component
- selection of variables to determine NTA payments
- description of NTA resident groups

Acumen explained that while current nursing payments are intended to include reimbursement for NTA services, they are based solely on utilization of nursing resources, and therefore nursing payments do not reflect variation in the utilization of NTA services. Creating a separate NTA payment component would better account for this variation in NTA costs. The project team identified three sets of resident characteristics that are good predictors of NTA costs: comorbidities, use of extensive services, and age. Acumen then described how these characteristics were used to create 11 resident groups for NTA payment. Panelists were asked to consider the following questions:

- (i) Are the independent variables selected appropriate predictors of NTA service use? Are there other explanatory variables that should be considered?
- (ii) Do the selected comorbidities match clinical expectations on which conditions increase NTA costs? Are there additional conditions that should be considered?
- (iii) Do the selected extensive services account for the differences in NTA costs in a comprehensive way? Are there additional conditions that should be considered?
- (iv) Does the trend of declining NTA costs with increasing age match clinical expectations?
- (v) Are there clinical categories based on types of inpatient stays that would be appropriate to consider for use in NTA payments?

3.3.1 Predictors of NTA Utilization

Acumen explained how three sets of resident characteristics – comorbidities, use of extensive services, and age – were used to predict NTA costs per day and construct resident groups for NTA payment. First, the project team identified comorbidities by mapping diagnoses from the SNF stay and prior care settings to the condition categories (CCs) used in the Medicare Part C risk adjustment model. Residents were then assigned a comorbidity score based on the relative costliness of each selected comorbidity present (points were assigned only for comorbidities associated with a notable increase in NTA costs). Next, Acumen identified seven extensive services associated with substantial increases in NTA costs and assigned residents with

at least one extensive service present to one of three extensive service tiers based on the relative costliness of the service. Finally, using empirical analysis, Acumen determined that age had a negative correlation with NTA costs.

Discussion

Panelists discussed whether the proposed model for NTA payment adequately captured variation in resource utilization across different types of residents. Several TEP members expressed concern that the proposed model was not using enough resident characteristics to explain the substantial variation in NTA costs. They said the resident groups created for NTA payment were too heterogeneous and suggested Acumen focus on improving the model's ability to predict costs for those with very high utilization of NTA services. TEP members said because of the heterogeneity of the resident groups for NTA payments, residents with very high NTA costs would be underpaid. Panelists suggested Acumen investigate an index model that would assign payment weights to residents based on regression coefficients of a large number of independent variables, similar to the Medicare Part C risk adjustment model. An index model would potentially better identify residents associated with higher NTA costs. Acumen and some panelists said any payment system based on resident groups will underpay for certain residents and overpay for others because payment for each group is based on average costs for a heterogeneous group of residents. Additionally, an index model could improve payment accuracy but likely would increase the complexity of the payment system. Some panelists expressed reservations towards introducing a complex system.

TEP members also discussed whether the proposed NTA component would adequately pay for specific types of residents. Panelists expressed concern that the proposed model may not accurately pay for costly drugs, particularly for residents who were prescribed costly drugs during their inpatient stay. A payment system that does not adequately predict costs for these types of residents could create access problems. Acumen said that including drugs as an element of payment may create undesirable incentives. Instead, resident characteristics that are related to utilization of costly drugs could be identified. One panelist emphasized the importance of ensuring that the determinants of NTA payments are not particularly vulnerable to payment incentives. Some panelists said intravenous (IV) medication was associated with higher NTA costs and questioned why this service was not included in the proposed model. One panelist cautioned that if SNFs are discouraged from providing IV medication when clinically warranted, SNF residents' hospital readmission rates could increase. Acumen said IV medication was excluded from the proposed model because the project team did not want to create an incentive for unnecessary use of IV drugs. Additionally, introduction of quality measures by ongoing CMS initiatives should address concerns with hospital readmission. One participant said prior research suggested IV medication was not likely to be administered when it was not clinically indicated.

Acumen suggested diagnoses could be identified that were associated with use of IV medication. The panelist said, however, that prior modeling revealed that IV medication had additional predictive value beyond simply including related diagnoses. Other panelists suggested Acumen consider including additional resident characteristics, such as a short stay indicator, wound care, dementia, and other cognitive impairments, that may be associated with higher NTA costs. Acumen said the project team investigated dementia and other cognitive impairments but they were not associated with notable increases in NTA costs, and in some cases, residents with certain cognitive impairments had lower average NTA costs than residents without these conditions. One panelist said age may be a good predictor of NTA costs because it is a proxy for length of stay, as younger residents tend to have shorter stays and older residents generally have longer stays.

Recommendations

- Explore an index model that would assign payment based on the predicted increase in costs for a large range of resident characteristics.
- Explore additional resident characteristics associated with utilization of costly drugs and IV medication.
- Consider including IV medication in the payment system.
- Consider including additional resident characteristics, such as short stay indicator, wound care, dementia, and other cognitive impairments, as predictors of NTA costs.

3.4 Session 5: Options for Revising Nursing Component

The objective of this session was to obtain input on the proposed approach for revising the nursing component. This session consisted of three primary topics:

- motivation to revise the nursing component
- measurement of resident-specific nursing costs
- approach for deriving nursing resident groups using STRIVE data

Acumen explained that reform of the therapy and NTA components require the revision of nursing case-mix indexes. However, current data do not have information on nursing resource utilization across different types of residents, which would enable the nursing indexes to be recalculated. The Staff Time and Resource Intensity Verification (STRIVE) study of nursing staff time conducted in nursing homes in 2006-2007 contains data on nursing utilization by resident characteristics. Data from the STRIVE study can be used to estimate the relative nursing utilization of various types of residents. These estimates can then be applied to the current data to create new resident groups and case-mix indexes for nursing payment. This approach should be methodologically valid as long as the relative costs of nursing services for different types of

residents has remained stable since 2006-2007. According to Acumen's research, the clinical composition of the SNF population has remained stable over time, although a small decline in functional status was observed. The following questions were proposed for discussion:

- (i) Is there any reason to believe that relative nursing costs across different types of residents have changed over time?
- (ii) What are salient resident characteristics that should be used to divide the population into analogous cells in the STRIVE data and the current data?
- (iii) Beyond making comparisons using facility costs, are there other ways to adjust for changes in nursing costs across time?
- (iv) What are some resident characteristics that are available in current data but not available in STRIVE, and should be used to define resident groups?

3.4.1 Proposed Methodology to Recalculate Nursing Indexes

Acumen described how the STRIVE data could be combined with current data on resident characteristics to estimate nursing utilization for the current SNF population. The project team would create groups of residents in the STRIVE and current SNF populations based on clinical characteristics found in both populations. The team would then assign the relative costs of groups from the STRIVE population to the corresponding groups in the current population. Acumen could either assign the average cost of each group in the STRIVE population to the corresponding group in the current population, or Acumen could assign the distribution of costs for each STRIVE group to the current groups. Finally, these estimates of nursing utilization for current residents can be used to derive nursing indexes and create case-mix groups.

Discussion

Discussion focused on how the STRIVE data would be used to estimate nursing utilization for current residents. Several panelists said it was not appropriate to use STRIVE data because of changes in nursing care or the SNF population since the study was conducted. One panelist said STRIVE data may not accurately reflect the clinical need for nursing services because nursing homes were understaffed during the study. The panelist encouraged Acumen to examine past studies of nursing adequacy for data on nursing utilization. Another TEP member said that partly in response to new quality measures, care practices and expectations have changed such that residents in SNFs currently require more nursing care than at the time the STRIVE study was conducted. Several participants questioned Acumen's finding that resident characteristics, with the exception of function, did not change notably over time. Multiple panelists said that SNF residents have become more acute over time. Panelists said there has been an increase in comorbidities over time and urged Acumen to investigate any changes in the clinical complexity of residents. Acumen said changes in acuity or care practices over time are not concerning as long as the relative costliness of different types of residents has remained stable. Acumen also listed various measures of acuity that were stable and in some cases

declined since the STRIVE study, including length of stay (for SNF and prior inpatient stays), ADL score, prevalence of dementia, malnutrition, IV use, diagnoses, and utilization of antibiotics. One panelist mentioned that substance use disorders have gone up in the past decade, and those could require high amounts of nursing staff time. Another panelist pointed out that the increases in minimum wage are raising nursing staff costs, and they are being introduced at different rates in different states and cities, leading to potential changes in relative resource use across populations. One panelist encouraged Acumen to compare the STRIVE data to later data from the Post-Acute Care Payment Reform Demonstration (PAC-PRD) to determine if relative nursing utilization across different types of residents changed.

Panelists also offered feedback on other aspects of the proposed methodology. Some panelists expressed general support on the proposed approach. One of them said the methodology was sound and similar to the approach MedPAC used to estimate routine costs in the PAC-PRD study. Another participant said Acumen should look at the types of personnel included in the measure of nursing utilization used in the STRIVE study and consider which types of nursing personnel should be included in this measure. One panelist said Acumen should update the relative wages for various types of nursing personnel to reflect current wage data. Another participant said assigning the cost distribution from the STRIVE study to current resident groups, instead of just the average cost of the group, could create unneeded complexity. Additionally, the participant said the cost distributions from the STRIVE groups may not be reliable given the small sample sizes in the study. Acumen said previous work using this methodology has been promising but the project team will have to verify this approach is appropriate to apply to the STRIVE data. One participant said Acumen should consider the effect of new requirements for SNFs, including the IMPACT Act, that could result in higher utilization of nursing resources.

Recommendations

- Consider changes in nursing home staffing levels and care practices over time when determining the appropriateness of using STRIVE data.
- Examine past studies of nursing adequacy for data on nursing utilization.
- Investigate any changes in the clinical complexity of SNF residents since the STRIVE study.
- Compare the STRIVE data to data from the PAC-PRD study to determine if relative nursing utilization across different types of residents changed.
- Consider what types of nursing personnel should be included in the STRIVE measure of nursing utilization.
- Update the relative wages for various types of nursing personnel to reflect current wage data.

- Consider the effect of new requirements for SNFs, including the IMPACT Act, that could result in higher utilization of nursing resources.

3.5 Session 6: Exploring Alternative Features of a Payment System

The objective of this session was to describe the motivation for using front-loaded daily pricing for the PT+OT and NTA components and present potential pricing options. This session consisted of three primary topics:

- reasons for using front-loaded daily pricing for PT+OT and NTA payments
- framework for alternative pricing structures
- examples for PT+OT using linear pricing and block pricing

Acumen explained that utilization of PT+OT and NTA services declines over a stay. A front-loaded daily pricing structure can account for these changes in resource utilization over a stay. This pricing structure has just three parameters: the portion of payment for a stay front-loaded on day 1, the portion of payment that is constant across the stay, and the slope indicating how quickly payment changes by day. Acumen then presented various examples of pricing structures for PT+OT payment using both linear pricing and block pricing. The following questions were proposed for discussion:

- (i) Should there be separate payment schedules for the four different service components, or should there be an integration of payment schedules across components?
- (ii) What portion of payments should be frontloaded to Day 1?
- (iii) Should daily payments be constant or decline through the stay? How quickly should payments decline?
- (iv) Should different resident groups have different decline rates, frontloading amounts, or initial daily rates?
- (v) What are the advantages of block pricing relative to linear pricing?

3.5.1 Potential Impacts of Proposed Pricing Structures

Acumen demonstrated how the three parameters used in front-loaded daily pricing - amount frontloaded on day 1, the portion of payment constant over the stay, and the slope indicating how quickly payment changes over the stay - could be modified to accommodate a variety of pricing patterns. The project team also described how front-loaded daily pricing could be implemented through block pricing. Block pricing has five parameters: the number of blocks, amount of frontloading, length of each block, portion of payment constant over the stay, and rate of decline in payments across blocks. Block pricing can also be adapted to a variety of pricing patterns. A higher number of blocks may track actual resource utilization more closely while fewer blocks would be simpler and allow better estimates of resource use for each block.

Discussion

Panelist discussion focused on how the proposed pricing structures would modify incentives for providers. Several panelists said the pricing structures would create incentives for providers to discharge residents early. Acumen acknowledged the proposed pricing structure could incentivize shorter SNF stays but said a constant per-diem payment rate, as in the current system, would not accurately reflect observed patterns of relative resource utilization over a stay. One panelist said a reduction in average length of stay could result in a reduction of total payments in the overall SNF PPS (because Medicare would pay for fewer days of care). Acumen said the pricing structures are based on current patterns in costs and can be revisited in the future if patterns of resource utilization change. Another panelist asked if controls could be implemented to ensure adequate care is provided, given incentives for shorter stays. Acumen said the system could continue to track therapy minutes. Additionally, controls could be put in place to prevent abuse of front-loaded payments. For example, if a facility discharges a resident to the hospital after a brief SNF stay and later re-admits the resident following a brief hospital stay, the facility could receive a front-loaded payment only for the first stay and would not receive a second front-loaded payment if the resident is re-admitted within a certain window. One panelist asked a related question about how transfers to a different SNF would be treated.

Panelists also discussed how the pricing structures would affect certain types of residents and facilities. TEP members expressed concern that payment based on resident characteristics at the beginning of a stay would not fully account for residents who develop complications during a stay. Acumen said the proposed payment system would be based on average costs for groups of residents, so it would likely underpay for certain residents and overpay for other residents, but should result in accurate payments on average. Additionally, it was pointed out that according to Acumen's estimates only 8% of residents would change to a higher PT+OT group during a stay, and only 3.5% would change to a higher-paying SLP group. One panelist expressed concern that residents with very high costs could result in losses for small facilities because these facilities may not treat enough lower-cost residents in a given year. Acumen said the proposed payment system is attempting to capture as many important predictors of costs as possible so that costly residents do not result in financial losses for facilities, and the current statute does not allow outlier payments. One TEP member asked how the proposed pricing structures would affect care for residents who cannot receive certain types of care until several days into their stay (e.g., post-surgical residents). Finally, one participant said Acumen should consider the impact of proposed pricing structures on residents who are eligible for Medicare and Medicaid (dual-eligibles) and residents who are admitted from the community.

Recommendations

- Consider how proposed pricing structures would affect provider incentives.

- Consider measures to ensure adequate care is provided after payment reforms are implemented.
- Consider measures to prevent abuse of front-loaded payments.
- Consider impact of pricing structures on specific types of residents and facilities: dual-eligibles, residents admitted from the community, residents who develop complications during a stay, small facilities, and residents who are unable to receive certain types of care until several days into the stay.

4 NEXT STEPS

Acumen is using the feedback received at the third TEP to inform its ongoing work to develop alternative approaches to the SNF payment system. Acumen is planning one additional TEP focusing on recommended changes to the payment system and will provide other engagement opportunities to share future progress and obtain feedback from stakeholders and researchers in post-acute care. The following list describes ongoing and future analyses Acumen plans to explore based on recommendations described in Section 3 of the Technical Expert Panel Summary Report:

Options for Revising Therapy Component (PT+OT)

- Build alternative measures of cognitive status, including measures proposed by TEP panelists: BIMS, CPS, and CFS.
- Separately investigate drivers of physical therapy (PT) and occupational therapy (OT) to determine if predictors of resource use for both modalities should be the same.
- Investigate options to further split the Medical Management category to identify discrete groups of residents with different patterns of resource use. These groups may not necessarily be based on clinical categories, which have been previously explored, but possibly on more granular use of function and cognition information, given the larger sample.
- Investigate alternative function score using mobility ADLs (transfers, walking, walking in hall).
- Consider the relationship between treatment received and changes in activities of daily living (ADL) score over a stay.
- Model likely impacts of alternative payment system on the following groups of residents, assuming current utilization: residents who receive short-term, intense rehabilitation; residents who receive longer-term, lower-intensity rehabilitation; and residents who do not receive rehabilitation.

Options for Creating Speech-Language Pathology Component

- Build alternative measures of cognitive status, including measures proposed by TEP panelists: BIMS, CPS, and CFS.
- Explore a more granular clinical classification for Speech Language Pathology, particularly within the “Other” category. Consider chronic neurologic conditions, laryngeal cancer, and other speech-language diagnoses, as suggested by panelists.

- Model likely impacts of alternative payment system on the following groups of residents, assuming current utilization: residents who receive antibiotics, ventilator treatment, or a tracheostomy; residents with multiple comorbidities; and residents in small or isolated providers.

Options for Creating Non-Therapy Ancillary Component

- Explore additional clinical characteristics and predictors of residents with high NTA costs.
- Consider a more granular approach for NTA services, for example, a comorbidity index score, or a comorbidity model that assigns points based on regression coefficients.
- Investigate clinical characteristics that relate to utilization of IV medication.
- Model likely impacts of alternative payment system on residents with dementia and residents who require wound care.

Options for Revising Nursing Component

- Work with STRIVE data to create nursing resident groups.
- Develop a methodology to calculate current nursing costs, given changes in relative wages and relative staffing levels across different types of nursing personnel.
- Compare proposed methodology to MedPAC's work with PAC-PRD data.

Exploring Alternative Features of a Payment System

- Explore different block pricing structures for different payment components and groups of residents, as well as how to integrate the different payment schedules.
- Design rules to mitigate potentially problematic incentives established by front-loaded payments and to ensure adequate quality of care
- Model likely impacts of alternative payment system on resident and provider subpopulations, assuming current utilization. Examples include small facilities, dual-eligibles, residents admitted from the community, and residents discharged to the community.
- Predict likely changes in therapy use and/or length of stay following implementation, and then model impacts of alternative payment system on various types of residents and providers, assuming changes in utilization.

APPENDIX A: DISCUSSION OBJECTIVES AND QUESTIONS

A.1 Session 2: Options for Revising Therapy Component (PT+OT)

Session Objective:

Describe reasons for creating two therapy components and obtain feedback on proposed PT+OT payment groups

Session Discussion Questions:

- Are the independent variables selected appropriate predictors of PT+OT? Are there sources of clinical or other information that would be predictive of PT+OT costs and were not already considered?
- Is the proposed Functional Measure a better indicator of PT+OT use than the existing ADL score? Are there any proposed refinements to the Functional Measure?
- Is the item B0700 (Makes Self Understood) an appropriate measure of how cognitive status affects PT+OT use? Are there other measures of cognition that should be explored?

A.2 Session 3: Options for Creating Speech-Language Pathology Component

Session Objective:

Obtain feedback on proposed Speech-Language Pathology (SLP) resident groups

Session Discussion Questions:

- Given the distinct resident groups for SLP and PT+OT resulting from the empirical analysis, is it appropriate to create two separate components for SLP and PT+OT?
- Besides the clinical categories considered, are there other types of acute inpatient stays that should be examined?
- Are there other items on the MDS that were not already tested, but potentially predictive of SLP costs?
- Are there other comorbidities or diagnoses that should be considered? Are there other services in residents' history that should be considered?

A.3 Session 4: Options for Creating Non-Therapy Ancillary Component

Session Objective:

Obtain feedback on proposed NTA payment groups

Session Discussion Questions:

- Are the independent variables selected appropriate predictors of NTA service use? Are there other explanatory variables that should be considered?
- Do the selected comorbidities match clinical expectations on which conditions increase NTA costs? Are there additional conditions that should be considered?
- Do the selected extensive services account for the differences in NTA costs in a comprehensive way? Are there additional conditions that should be considered?
- Does the trend of declining NTA costs with increasing age match clinical expectations?
- Are there clinical categories based on types of inpatient stays that would be appropriate to consider for use in NTA payments?

A.4 Session 5: Options for Revising Nursing Component

Session Objective:

Obtain input on proposed approach for revising the nursing component

Session Discussion Questions:

- Is there any reason to believe that relative nursing costs across different types of residents have changed over time?
- What are salient resident characteristics that should be used to divide the population into analogous cells in the STRIVE data and the current data?
- Beyond making comparisons using facility costs, are there other ways to adjust for changes in nursing costs across time?
- What are some resident characteristics that are available in current data but not available in STRIVE, and should be used to define resident groups?

A.5 Session 6: Exploring Alternative Features of a Payment System

Session Objective:

Describe motivation for using front-loaded daily pricing for the PT+OT and NTA components, and present potential pricing options

Session Discussion Questions:

- Should there be separate payment schedules for the four different service components, or should there be an integration of payment schedules across components?
- What portion of payments should be frontloaded to Day 1?
- Should daily payments be constant or decline through the stay? How quickly should payments decline?
- Should different resident groups have different decline rates, frontloading amounts, or initial daily rates?
- What are the advantages of block pricing relative to linear pricing?