



ACUMEN

**SNF THERAPY PAYMENT MODELS
BASE YEAR FINAL SUMMARY REPORT**

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Acumen, LLC
500 Airport Blvd., Suite 365
Burlingame, CA 94010

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1 INTRODUCTION

This report summarizes our yearlong effort to identify and evaluate potential alternatives to therapy reimbursement for the skilled nursing facility (SNF) prospective payment system (PPS). Since 1998, Medicare has paid for services provided by SNFs under the Medicare Part A benefit on a per diem basis through the SNF PPS. Currently, therapy reimbursement under the SNF PPS is based primarily on the amount of therapy provided to a resident. Recommendations to change the reimbursement model have come from the Medicare Payment Advisory Commission (MedPAC) and the Office of the Inspector General (OIG) (MedPAC 2008; Levinson 2012), as well as from research conducted by The Urban Institute that was commissioned by Centers for Medicare & Medicaid Services (CMS) (Liu et al. 2007). These reports advocate for a new model that would consider specific patient characteristics and care needs. In addition, the reports and other sources have faulted the current therapy reimbursement model for the increasing volume of therapy services billed to Medicare by SNFs by creating financial incentives for therapy provision (MedPAC 2008). By identifying and addressing these opportunities for improvement, the project team will develop alternative therapy payment approaches and evaluate how well these changes would strengthen the system.

Over the first year of this contract, the project team followed a four-step process to identify and evaluate possible alternatives to therapy reimbursement for the SNF PPS. The project steps varied in scope from a broad examination of all components of the SNF PPS to a targeted evaluation of concepts identified as possible replacements for the current method of determining payment for therapy.

First, we conducted an environmental scan and reached out to stakeholders to gather information about the existing therapy reimbursement for the SNF PPS and possible alternative payment approaches. The environmental scan drew on evaluations of therapy reimbursement for the SNF PPS published in the academic literature, in the gray literature¹, and in reports from agencies such as the Medicare Payment Advisory Commission (MedPAC). The project team also relied on these sources to identify potential solutions to address the current system's limitations. Stakeholder outreach activities consisted of a listening session and the solicitation of public comments through a CMS email box. The project team used these stakeholder outreach strategies to gather information about perceptions of the strengths and limitations of the existing payment system and to formulate ideas for improvement. The findings from the environmental scan and the stakeholder outreach helped inform the other components of this project and provided examples of alternative payment approaches that might replace the existing therapy reimbursement methodology for the SNF PPS.

¹ Includes official reports, documents, and other materials not published commercially or widely available

Second, we built upon the systematic literature review and solicitation of stakeholder feedback by identifying areas for future analysis to support the selection and implementation of an alternative payment approach for SNF therapy services. The project team identified gaps in the existing literature, as well as data limitations that would hinder efforts to select, specify, and implement an alternative payment approach. To address these gaps and limitations, the project team proposed two groups of potential analyses. The first group would support the development of a payment classification system for SNF therapy services based on resident characteristics, while the second group would support making changes to the design of the payment unit for SNF therapy services. Study designs proposed in this step will support efforts to revise therapy payments.

Third, the project team drew on information obtained through the prior steps to evaluate a broad range of considerations for the development of a SNF PPS therapy payment alternative. The exhaustive menu of considerations for revising the SNF therapy payment system included:

- payment unit choices;
- therapy case-mix options;
- data sources;
- pricing adjustments; and
- resident cost-sharing alternatives.

The project team evaluated choices within these broad categories of considerations on the basis of their impact within the SNF setting, impact across settings, and feasibility of implementation.

Finally, after contemplating all of the above considerations, we determined that four broad candidate payment concepts could be constructed for therapy payment. We proceeded to evaluate each concept according to a set of criteria. The project team selected concepts that represent fundamentally different approaches to paying for SNF therapy services. The four alternatives evaluated by the project team were a resident characteristics model, a resident characteristics model blended with a resource-based pricing adjustment (henceforth the hybrid model), a fee schedule, and a competitive bidding model; each of these models are described in more detail in Section 5. The project team evaluated each concept according to six groups of criteria. The criteria, illustrating the features of an optimal payment approach, included the ability to improve payment accuracy and the feasibility of implementation in the short- to medium-term. The project team then used the evaluations of each payment concept to recommend that the resident characteristics model and the hybrid model proceed to the next stage of the project.

In Option Period 1 of this project, we will formalize the recommended payment approaches into fully implementable alternatives and conduct a thorough analysis to determine their explanatory power. We will consider how well they perform on criteria that represent the

features of an optimal payment approach, including how well the alternatives improve payment accuracy for SNF services, how well they improve incentives to provide individualized care for residents, and how feasible they are to implement in the short-to-medium-term. The remainder of this paper discusses each of the components of the project team’s work over the past year in turn, as well as the direction of the project in Option Period 1. Section 2 summarizes the results of the environmental scan and stakeholder outreach. Section 3 outlines the recommendations for conducting additional studies to address gaps in the existing literature. Section 4 summarizes the approaches identified, and Section 5 describes the evaluation of these approaches against important criteria. Finally, Section 6 concludes with the next steps to be completed during Option Period 1.

2 LITERATURE REVIEW AND STAKEHOLDER OUTREACH

The first component of the project team’s work was to conduct a literature review and to engage in stakeholder outreach. The literature review identified the history of SNF PPS therapy reimbursement, the prevailing assessments of the existing payment system, and options for alternative payment approaches. From the critiques in the literature, the project team identified several potential approaches to altering the way the SNF PPS reimburses for therapy services, including: moving from case-mix groups based on resource measures to case-mix groups based on resident characteristics; changing the process for setting prices for different types and levels of services; changing the mechanisms for delivering payment to SNFs, including the payment unit and the payment delivery schedule; and engaging in longer-term redesign efforts, such as the development of value-based purchasing or the bundling of acute and post-acute services. To engage stakeholders, the project team held a Listening Session and solicited comments through a public email inbox. These outreach efforts elicited comments from stakeholders covering a range of SNF therapy reimbursement issues, including the positive elements of the current therapy payment approach, areas of improvement, and alternative payment design options. The findings from the literature review and stakeholder outreach efforts informed the subsequent components of this project and provided examples of how therapy payments in the SNF setting could be improved. The remainder of this section describes the literature review and stakeholder outreach activities in detail. Section 2.1 outlines the process for conducting the literature review and the key findings. Section 2.2 reviews the stakeholder outreach process, including the listening session and the CMS email box.

2.1 Literature Review

The project team followed a systematic process for identifying, reviewing, and cataloguing sources in the literature and identified many approaches for altering therapy payments. This process included developing strategies for locating relevant sources in the academic literature, the gray literature, and the legislative and regulatory history. The project team identified articles in the academic literature using a range of databases and targeted search strings and identified gray literature sources through organization websites, CMS contacts, internal project team experts, and the bibliographies of other sources. Legislative and regulatory history sources were taken from relevant proposed and final rules and CMS sources. The project team also reviewed international sources and state Medicaid programs for approaches that could be applied to SNF therapy payments in Medicare. After identifying these sources, the project team assessed the relevance of each using a set of predefined criteria. The literature review findings fell into three categories: history of the SNF PPS, critiques of the SNF PPS, and descriptions and limitations of alternative payment approaches. The project team catalogued all relevant sources and synthesized the results into a single summary.

2.1.1 Development of the SNF PPS

The first section of the literature review outlined how the adoption of the SNF PPS represented a shift from a retrospective, cost-based payment system to a prospective system that determined per-diem payments based on resident case mix. Under the earlier cost-based system, utilization and payments rose substantially in the 1990s, prompting Congress to mandate the establishment of the SNF PPS through the Balanced Budget Act of 1997 (BBA). The SNF PPS pays a per-diem rate adjusted for resident case mix and geographical variation in labor costs. The goal of the case-mix system is to classify residents into groups with similar expected resource use.

The SNF PPS uses the Resource Utilization Group (RUG) classification system, which aims to set payments that accurately reflect the cost of care for the different types of residents in each facility. The RUG-III case-mix system assigned residents to 44 groups organized into seven hierarchical categories; one of these broad categories was Rehabilitation. Assignment to a RUG within the Rehabilitation category was largely determined by resource use. While this method of classification created an incentive for facilities to provide higher volumes of therapy for Part A SNF residents, CMS chose a system based on resource use rather than resident characteristics due to data limitations at the time of adoption and concerns about maintaining access to care after the transition. In FY 2006, CMS moved from RUG-44 to RUG-53 by adding nine additional case-mix groups at the top of the hierarchy for residents who needed both extensive services and rehabilitation. The new categories more accurately reflected the cost of care for this clinically complex group of residents.

In FY 2011, CMS established the RUG-IV classification system in conjunction with the introduction of Minimum Data Set version 3 (MDS 3.0). The RUG-IV system was created using information collected during the Staff Time and Resource Intensity Verification (STRIVE) project. The STRIVE data were intended to update the results of earlier staff time measurement (STM) studies that were used to help calculate therapy payments. The new results suggested that SNF practice patterns had changed substantially since the previous STM studies and supported the creation of the RUG-IV system. At the same time that RUG-IV became the basis for SNF PPS payment, MDS 3.0 was introduced, updating the assessment tool used to collect the information for categorizing residents into RUGs. In FY 2012, CMS made adjustments to the RUG-IV system to more appropriately pay for the therapy services provided by allocating the time spent in group therapy and establishing the change of therapy assessment. Although these changes have improved the accuracy of therapy payments, the basis of therapy payment has relied on staff resource utilization using the same basic model since the inception of the SNF PPS. This research project contemplates revising or replacing the existing SNF therapy payment

methodology to ensure that the SNF PPS provides accurate payment for quality services tailored to the individual needs of residents.

2.1.2 Critiques of the SNF PPS

The second section of the literature review focused on assessments of the SNF PPS. While the recent changes in FY 2011 and FY 2012 refined the RUG classification system and helped more accurately measure and reimburse therapy use, the literature identified areas in which the SNF PPS could be further modified. The project team found critiques related to three main areas: 1) provision and payment of therapy services, 2) payment of NTA costs, and 3) integration of payment across post-acute care (PAC) settings.

First, critiques in the literature described different effects of basing the case-mix classification of therapy residents on service utilization. To ensure the resident's therapy level is accurately captured at each point throughout the stay, CMS has introduced assessments such as the change-of-therapy assessment. While the additional assessments record changes in a resident's therapy use, they also increase the data collection burden and complexity of the system and make SNF PPS therapy payments more retrospective in nature. Moreover, MedPAC noted that basing therapy payments on the amount of therapy provided creates "an incentive to furnish therapy services for financial rather than clinical reasons" (MedPAC 2008). Several studies have also reported that changes in resident case mix have not accounted for the increase in therapy services observed since the introduction of the SNF PPS (Carter et al. 2012; Levinson 2012).

Second, the literature contained concerns about variability in NTA costs among the RUG categories and weights. The nursing component of the SNF PPS is supposed to include NTA costs, but The Urban Institute found nursing weights and NTA costs to be weakly related (Wissoker and Zuckerman 2012). As such, residents with high NTA costs can be very expensive for SNFs to treat. The Urban Institute suggested that more accurate payments for NTA would leave SNFs with "less incentive to avoid certain types of patients with high NTA care needs" and "afford SNFs some financial protection against exceptionally high-cost stays" (Liu et al. 2007).

Third, the literature identified benefits of moving to an episode-based approach that bundles PAC services or acute and PAC services. MedPAC suggested that bundled payments "have the potential to improve care coordination and quality of services, rationalize service use, and lower potentially avoidable readmissions" (MedPAC 2013m). In the same report, MedPAC also noted that bundled payments incentivize a more efficient mix of services, provided that appropriate safeguards against inadequate care are put in place. Bundled payments could result in providers shifting some beneficiaries to lower cost PAC settings or furnishing only necessary services. MedPAC identified the latter reaction as particularly relevant for SNFs, as the recent growth in SNF service use "appears unrelated to patient care needs" (MedPAC 2013m). A bundled payment system is outside the scope of this contract, however, because it reflects a long-

term solution, while this project is focused on changes to the SNF PPS that could be incorporated in a shorter timeframe.

2.1.3 Alternative Payment Options

The review of the literature identified several options for addressing the issues discussed above. One of the most consistent recommendations in the literature was to shift away from a case-mix system that based therapy payments on the resident's existing level of therapy utilization within the SNF setting to a system based on individualized therapy needs as determined by resident characteristics. The literature provided several examples of alternative case-mix approaches based on resident characteristics, including the New Profiles model developed by the Urban Institute and the MedPAC model (Liu et al. 2007; Wissoker and Zuckerman 2012). Possible data sources for developing an alternative case-mix system would include assessment data, either in its existing form or revised to include improved additional items relevant to determining therapy payment/cost.

The literature also included options for changing SNF therapy payments by switching the mechanism used to determine the level of payment for SNF services. For example, while CMS currently uses staff-time measurement (STM) studies to set case-mix weights for the SNF PPS, the literature provides examples of other settings, such as the inpatient and outpatient setting, that use administrative data and cost reports for this purpose (Liu et al. 2007). Competitive pricing mechanisms, which are currently in use for durable medical equipment (DME) and Medicare Advantage, could also be applied to the SNF therapy setting (MedPAC 2013a; MedPAC 2013g). The hospice setting and Part B therapy provide examples of another potential option, payment caps (MedPAC 2013c; MedPAC 2013j). Finally, the literature suggested that outlier payments for high-cost stays or high-cost therapy stays may address access-to-care concerns associated with these payment system changes (Carter et al. 2012). While each of these options may improve the system's ability to set the level for SNF therapy services accurately, there may be barriers to implementation for each of these options, ranging from insufficient quality of data to the need for legislative action.

The literature also identified potential changes to the mechanism for delivering payment. One of the main suggestions was to broaden the payment unit to promote more efficiency in the delivery of services. In reaction to this incentive structure, providers may choose to reduce the level of services provided or length of stay to reduce costs; however incentives to reduce length of stay may be beneficial in the SNF setting. Today SNF residents are often discharged to home health to continue their medical or functional status treatments, suggesting that a stay-level payment unit may encourage movement to a less intensive setting as early as is feasible (Gage et al. 2011).

While the current project focuses on options that could be implemented in the medium-term, the literature also identified long-term options for systemic redesign. Several payment systems are currently being piloted that could help achieve this type of reform: value-based purchasing (VBP), also referred to as pay-for-performance, and bundling of acute and post-acute services. These payment systems are designed to both increase the quality and efficacy of care and to slow the growth of health care spending. A VBP system reduces incentives to provide inappropriate or costly care and encourages providers to continually improve the quality of care provided to residents because payments are tied to predetermined measures of quality (U.S. Department of Health and Human Services 2011b). Bundling acute and post-acute services into an episode payment may encourage providers to consider an entire episode of care for a resident and produce an incentive for providers to coordinate care across settings, ensuring that residents are discharged to the appropriate settings at appropriate times (MedPAC 2013m).

2.2 Stakeholder Outreach

To complement the literature review, the project team also conducted stakeholder outreach, which included a listening session and solicitation of stakeholder comments through a CMS email inbox created for this project. Listening session participants included representatives from MedPAC, the occupational and physical therapy industries, the long-term care associations, and the nursing industry. The listening session provided a forum for key stakeholders to discuss the strengths of the SNF PPS, potential revisions to the system, and the value of standardization across PAC settings. Stakeholders utilizing the CMS email box were invited to provide comments on the advantages and disadvantages of the current SNF PPS, as well as any suggestions for revising the PPS or therapy payments. Examples of suggestions provided in email comments include changing the payment system so that providers are not incentivized to provide high levels of therapy unrelated to patient need and moving to a retrospective payment system based on submitted MDS assessments. The findings and ideas discussed at the listening session and submitted via the CMS email inbox provided the project team with a sample of stakeholder opinion on therapy payment under the SNF PPS and suggestions for improving or altering the existing payment system to better account for a patient's therapy resource needs. The feedback was compiled and used in the subsequent development of alternative payment approaches.

2.2.1 Listening Session

The listening session provided a forum for key stakeholders to discuss the positive elements and areas of improvement for therapy payment under the SNF PPS, potential revisions to therapy payment mechanisms, and standardization of payment systems across PAC settings. To structure the discussion and elicit stakeholder feedback on redesigning the SNF therapy payments, the listening session solicited stakeholder response to four questions:

- What elements of therapy payment under the SNF PPS do you feel work well?
- How would you design an alternative system to pay for therapy services in SNFs that would better align the resource needs of residents with payments for services?
- Do you know of any new or unused data sources that could serve as the underpinning for such a new system, and are there any new studies or research that would be required to obtain such data?
- How would you envision the new SNF therapy payment system fitting into the current SNF PPS? What changes would need to be made to the system as a whole to accommodate the new SNF therapy payment model?

The listening session participants generally believed that the current SNF PPS helps providers meet residents' needs by adequately paying for therapy for those who need it and facilitating good functional outcomes in the process. One participant suggested that the SNF PPS has encouraged fairly standardized treatment compared to the three decades prior to the implementation of the current system. Although the PPS was intended to ensure access to therapy in SNFs, the current SNF PPS encompasses a payment incentive for greater use of the more highly reimbursed therapy RUGs without consideration of resource use or resident need. Consequently, one unintended outcome of the payment incentives in the current SNF PPS is that they encourage SNFs to allocate more resources to therapy-intensive residents relative to medically complex residents, which may not reflect actual treatment needs.

Many participants commented that therapy payments should be based on resident characteristics rather than on the number of therapy minutes provided. Participants suggested that an approach that sets payment based on a resident's profile and that is consistent across payers would encourage a consistent clinical process in SNFs. Other participants suggested that the resident's diagnoses and information regarding the cause of the qualifying inpatient hospital stay, as well as current conditions and pre-morbid status (e.g., the resident's function prior to decline), all available from International Classification of Diseases, Clinical Modification (ICD CM) diagnosis codes and clinical documentation, should be used to determine therapy payments. While there was general support for developing an alternative therapy payment system using resident characteristics, there was also a concern that such a method of classification could have lower explanatory power for predicting therapy use than the current PPS, given that the current PPS is based on resource utilization. However, participants felt this should not dissuade CMS from designing therapy payments that depend on the characteristics of an individual resident.

Multiple participants urged CMS to consider the continuum of care and care transitions when designing a new payment alternative. One participant noted that there are similar beneficiaries in different PAC settings generating different levels of reimbursement for the providers. They indicated that an ideal payment design would allow comparison across PAC

settings and would be based on complexity and severity, not the care setting. Participants also thought that assessments should be standardized across settings, as in the Continuity Assessment Record and Evaluation (CARE) tool, to facilitate measuring values across settings. They suggested there should be a core data set with measures that enable risk adjustment and information on beneficiary outcomes to be consistent across settings. Noting difficulties in using risk adjustment methodologies on small sample sizes within each RUG, a participant suggested CMS identify the triggers of utilization, length of stay, and, ultimately, cost to increase payment accuracy and inform an outlier payment design.

Participants also noted the importance of resident and family involvement with the clinicians when considering the goals of an episode. Within an episode, the treatment and desired outcomes should be carefully considered and tailored to a resident's specific goals. The participants were open to an episode-based or stay-based payment system either for SNF therapy payments or for all SNF care. However, they also noted the need for outlier adjustments to ensure access for the most complicated episodes. Additionally, one participant highlighted the challenge of defining episodes across care settings and argued that home care may not fit neatly into post-acute care. The participants also discussed data limitations and the work needed before moving to stay-based or episode-based payment systems, as well as the need to develop universal outcomes measures for rehabilitation in PAC and SNF settings. Multiple participants voiced concerns that current claims and assessment data are not sufficiently developed to define episodes of care. Moreover, participants suggested developing universal rehabilitation outcome measures for PAC and SNF settings and incorporating those outcomes into the payment systems. The group felt that any future initiatives on the SNF PPS or outcome measures should support and interact with the work that CMS has already conducted and research underway in other organizations. For example, American Health Care Association (AHCA), in conjunction with other parties such as National Association for the Support of Long Term Care (NASL), is working on a project reviewing proprietary outcomes tools to develop outcome measures and move toward use of the Continuity Assessment Record and Evaluation (CARE) function items, and HealthCare Navigator is also developing a measure for National Quality Forum endorsement and training staff on the appropriate parts of the CARE tool.

Although participants identified potential in the longer-term payment approaches (e.g., bundled payments), other participants noted that these long-run possibilities may not solve the issues identified with the current payment system. Some suggested that CMS should be looking more broadly at accountable care organization (ACO) initiatives and bundled payments,² while others expected that the SNF PPS and other fee-for-service (FFS) programs would remain in

² CMS is currently studying these ideas through demonstrations or pilots, such as the Medicare Shared Savings Program, the Pioneer ACO program, and the Bundled Payments for Care Improvement Initiative.

their current form over the long term. One participant suggested an interim payment system as CMS develops a new payment system to replace the SNF PPS in the long run. Despite potential complications or limitations of alternatives to the SNF PPS, participants felt efforts to optimize the current payment system for the resident, provider, and Medicare in the short- to medium-term should be encouraged. Stakeholders recommended that CMS consider a pilot for testing new forms of therapy payment and seek provider input, as well as promote better care coordination between nursing and therapy practitioners with better coding and scope of practice.

2.2.2 CMS Email Box

Stakeholders also provided their comments on the advantages and limitations of the SNF PPS through a CMS email box. The project team tracks emails from stakeholders as they are received and categorizes the suggestions based on their content in a log. Comments thus far have focused on therapy standards, MDS assessment data, and opportunities for fraud. Several stakeholders raised concerns that current SNF practices encourage providers to provide higher amounts of therapy to residents and noted that therapy services and documentation should be verified by third parties. Another stakeholder suggested that rehabilitation managers should be held accountable for all inappropriate or unnecessary therapy (e.g., through imposed fines). Several stakeholders raised the idea of eliminating the therapy component from the case-mix weights and paying for physical therapy, occupational therapy, and speech therapy under Medicare Part B, which is currently done for nursing facility residents who are not covered under Part A; the RUGs would then account for clinical conditions and nursing time but not therapy time. Several stakeholders suggested that the MDS be administered weekly or biweekly to determine therapy use and identify the appropriate RUG and payment level for that window, either retrospectively or prospectively.

Stakeholders recommended both more substantial changes to the SNF therapy payments and more stability. One suggestion was to establish a per-diem payment rate that is based on hospital diagnoses and adjusted by skilled nursing and therapy needs. Another respondent suggested that payments could be based on beneficiary outcomes rather than therapy minutes or procedures. Many stakeholders also viewed frequently changing payment rules and payments to nursing homes as disruptive, suggesting that they reduce quality of care for SNF patients. They expressed a preference for stability and predictability of payments. These comments were considered as the project team explored how to revise the existing therapy payment methodology under the SNF PPS.

2.3 Using Literature and Stakeholder Feedback to Identify System Options

The project team narrowed the alternative payment approaches found through the literature review and stakeholder outreach to those that were particularly relevant for this project.

The recommendations on different pricing structures, payment units, pricing adjustments, and data sources used for case-mix adjustment were considered as we established broad payment approaches for further consideration. In the next phase of this project, we identified supplementary analyses needed to evaluate and implement each of these promising approaches.

3 SUPPLEMENTARY ANALYSES

The project team identified gaps in the SNF payment literature that would prevent our team from effectively evaluating certain payment approaches under consideration. Thus, we developed and proposed additional analysis that would address these gaps and provide the additional information needed to help develop alternative payment approaches. For example, multiple sources in the literature suggested using resident characteristics to determine therapy payment, but although the administrative data available (i.e., Medicare claims and assessment data) can provide some information, functional improvement data for this purpose are limited. The project team identified two groups of analyses through this process. The first group included analyses needed to support developing a payment classification system for therapy based on resident characteristics. The second group consisted of analyses to inform the choice of payment unit. The project team then determined the extent of additional analysis that would be required to pursue each of the alternatives identified in the literature review. This work aided us in categorizing the feasibility of implementing each of the identified options within the short- to medium-term timeline specified for this project.

The remainder of this section describes the development of the supplementary analyses. First, Section 3.1 describes the methodology used to identify gaps in the literature warranting additional analysis. Second, Section 3.2 presents key findings and their relevance to the larger project.

3.1 Methodology for Identifying Additional Analyses

The project team identified supplementary analyses that would aid the development of an alternative payment approach through a four-step process, each of which is discussed in detail in the subsections below. First, the project team used the results of the literature review to identify areas in which further research may be useful or necessary to help design alternatives to current therapy payment under the SNF PPS. For each of these identified areas, we explained how the proposed research would contribute to the project's goals. Second, the project team performed preliminary data analysis when necessary to provide a rationale for conducting additional research within each topic area. Third, the project team provided specifications for potential studies within each of the identified areas, including data sources, the study population, and the basic regression structure (i.e., dependent and independent variables). Finally, we assessed the ability of existing data sources to support the proposed analyses. In instances where data were limited, potential solutions were identified for conducting the analyses.

3.1.1 Identifying Areas for Future Research

First, the project team used the literature review to identify gaps in the existing SNF payment policy literature and proposed additional analyses that would address these gaps.

Through this review, we identified two groups of analyses that would aid the design of alternative therapy payment approaches. One group of analyses was designed to identify the relationships between therapy and resident characteristics. The project team proposed four studies within this group. The literature review highlighted the lack of established clinical standards for therapy provision, particularly for residents with cognitive impairments. So, the goal of the first study was to measure the effect of cognitive status on therapy use. More research into this topic area would support the development of a payment structure that appropriately accounts for the effect of cognitive impairments on a resident's therapy regimen and the resident's expected functional outcomes. The second study was designed to test the ability of functional status³ to predict the level of therapy services, since the literature review found no sufficient work examining the relationship between different measures of functional status and usage of therapy. This research would aid in the development of a revised SNF therapy payment system by helping quantify current practice patterns in providing therapy to residents with different levels of functional ability. The third study was intended to examine whether functional outcomes for residents differed by the facility's level of experience in providing therapy, as measured by the facility's volume of therapy services. Findings from this study may indicate that to derive the most clinically relevant relationship between resident characteristics and the resident's therapy needs, the project team may need to focus on facilities with extensive experience in delivering therapy. Finally, the fourth study was designed to examine the relationship between therapy use and functional outcomes. The literature review found that evidence-based clinical guidelines for the provision of therapy in SNFs are not universally available, and initial work is needed to examine the relationship between therapy provision and resident outcomes.

The second group was comprised of two studies intended to test the potential effects of changing the unit of payment on SNF therapy payments. The first study was designed to measure the variation in resource utilization across a stay, which would aid the design of an alternative therapy payment approach that accounts for changes in therapy services across a stay (e.g., declining block pricing). Although the literature review identified a few studies examining the sequence and intensity of therapy services across a stay, these studies varied in their approaches and results and none focused on the current SNF environment; thus, the project team proposed a study using MDS data that would incorporate lessons learned from these previous studies. The second study would examine the relationship between length of stay and outcomes. A departure from per-diem payments toward discharge- or stay-based payments would provide

³ Functional status is defined as an individual's ability to perform normal daily activities required to meet basic needs, fulfill usual roles, and maintain health and well-being. Source: "Functional Status," American Thoracic Society, accessed April 16, 2014, qol.thoracic.org/sections/key-concepts/functional-status.html.

an incentive for providers to discharge residents as early as possible. However, current evidence on the effect of shorter SNF stays on resident outcomes is deficient. To fill this gap, additional analysis of the relationship between SNF length of stay and key indicators of quality of SNF care is required.

3.1.2 Conducting Supplementary Analyses

While the proposals for some studies drew justification from data in the literature, the project team found little to no information in the literature about other study proposals described above. Therefore, we conducted preliminary analyses to demonstrate the need for additional work in these areas. The project team used Medicare Part A claims data and MDS assessment data to generate basic summary statistics identifying associations that were inadequately explained by the current literature. For example, to demonstrate the benefits of studying the relationship between functional status and therapy provision, the project team produced descriptive statistics examining the average ADL score of SNF residents at the start of their stay, stratified by the length and therapy level of the stay. These preliminary results could be used to support future work developing a measure of functional status for inclusion in a case-mix system based on resident characteristics. The project team generated similar high-level summary statistics for many of the other proposed studies.

3.1.3 Developing Preliminary Analysis Specifications

For each analysis suggested, the project team provided a high-level research design, including requisite data sources and the general methodological approach. The proposed analyses would use Medicare enrollment data, fee-for-service claims data, MDS assessment data, and provider characteristics data to study the Medicare Part A SNF population. The project team also identified the basic structure of the regressions necessary to answer the study questions, including potential dependent and independent variables. A more detailed analysis plan would be required before undertaking any of the proposed studies, but the overview of studies at this stage of the analysis laid a foundation for future work.

3.1.4 Assessing Sufficiency of Existing Data Sources

As part of the general research strategy, the project team included an estimate of the study's feasibility, based largely on the sufficiency of existing data sources to meet the needs of the study. The project team identified two main limitations that would affect the ability to complete the proposed studies. First, establishing the reliability of discharge indications would be necessary for measuring functional improvement over a stay. Second, understanding the accuracy and level of specificity of diagnostic information reported on the SNF claim would be important for interpreting the connection between a resident's clinical characteristics and the therapy received in the SNF. In addition to summarizing the issues, the project team also identified options for improving these data sources or compensating for their limitations.

3.2 Feasibility of Suggested Analyses

Given the proposed studies' reliance on existing and readily accessible data sources, most of the supplementary analyses are feasible in the near term, and their results supported this project's efforts to revise therapy payment under the SNF PPS. With additional information on the connections between therapy provision and resident characteristics as well as the potential changes to the payment unit, CMS is better positioned to consider the therapy payment options supplied in the literature. By identifying the gaps in knowledge, and possible research designs to fill them, this task generated information that supported work under the next stage of the project, where the advantages and disadvantages of different payment model options were specified. Specifically, this assessment helped categorize the feasibility of different options for the short- to medium-term timeline of this project. With this information, the project team proceeded to develop alternatives to the existing methodology for paying for therapy services in the SNF PPS.

4 REVIEW OF SYSTEM OPTIONS

The project identified a broad range of payment system options from the literature review and stakeholder outreach that could potentially be used to revise SNF therapy payment in the short- to medium-term. Each of the options is a single component of a payment system, rather than a complete payment system that would potentially replace the SNF PPS in its entirety. The five components of the payment system we explored include

- (i) payment units;
- (ii) case-mix classification systems;
- (iii) data sources;
- (iv) pricing adjustments; and
- (v) cost-sharing.

The modular approach allows for maximum flexibility in designing an optimal payment system for SNF therapy services.

The remainder of this section describes the methodology and findings for the review of system options. Section 4.1 outlines the process we used to identify and review different payment system options. Section 4.2 presents the findings related to payment unit choices. Section 4.3 describes the therapy case-mix options identified by the project team. Section 4.4 explains the options for data sources for use in a SNF therapy payment system. Section 4.5 presents the pricing adjustment options we identified. Section 4.6 describes resident cost sharing. Finally, Section 4.7 explains how the project team used the findings from the review of system options to support work under the next step of the project.

4.1 Process for Identifying and Reviewing System Options

We identified a series of components that could be incorporated into the new payment approach and grouped them into one of the five major categories (i.e., payment unit, case-mix system, data source, pricing adjustment, and beneficiary cost sharing). These options are described and analyzed relative to other options grouped within the same component in each remaining subsection.

4.2 Payment Unit Choices

The choice of a payment unit—comprised of services provided and their basis of payment—is an important step in specifying a therapy payment system, and involves two independent decisions. The first choice is whether physical, occupational, and speech therapy should be modeled separately or together. Currently, these three therapy disciplines are modeled together in that each minute of therapy is counted equally towards the RUG determination. However, usage patterns and costs may differ by therapy discipline, and separating them for

classification purposes may produce a more accurate payment model by better aligning SNF costs and Medicare reimbursement. However, separating payment by therapy discipline may change the price of therapy in the SNF setting relative to other PAC settings, which may affect referral patterns of providers among the PAC settings.

The second choice is the basis of payment. For instance, whether payment should occur on a per-minute, per-diem, per-stay, or per-episode basis. The current payment unit for the SNF PPS is a utilization day and any change would require legislative action,⁴ but switching to broader payment units could promote a more efficient use of resources in the SNF setting by indirectly rewarding the providers that are able to regulate their costs across a wider window. The choice of a broader payment unit includes possible additional provider risk, but provides more flexibility by allowing costs to be spread out over a longer time frame. Each case-mix option proposed in the following section includes a default payment unit, but any payment unit choice could be inserted without changing the interpretation.

4.3 Therapy Case-Mix Options

A fundamental component of revising therapy payments is a framework for organizing residents into groups expected to receive a similar amount of therapy. The options for case-mix groups proposed in the review of system options are divided into three types: (i) resource-based options, (ii) resident characteristics-based options, and (iii) outcomes-based options. The first three subsections that follow summarize options within each of these three types in turn, and the final subsection compares therapy case-mix options across all types.

4.3.1 Resource-Based Options

A resource-based payment system would determine the level of reimbursement using measures of resource utilization, such as the number of minutes of therapy or the frequency of therapy sessions. There are two major advantages to a resource-based payment system: first, it does not create financial incentives that may limit quality of and access to care, and second, it emphasizes the importance of the clinical judgment of providers in determining the appropriate level of services.

An example of a resource-based option would be a therapy fee schedule, which would carve therapy services out of the SNF PPS bundle to pay for them separately on an FFS basis. Proponents of a fee schedule approach highlight three main advantages: (i) greater consistency across Part A and Part B SNF stays, (ii) sustained access to therapy for residents requiring above-average amounts of therapy, and (iii) removal of target payment thresholds that might predispose a resident's access to an expected level of therapy utilization (e.g., 720 minutes for

⁴ Social Security Act of 1935, 42 U.S.C. § 1395yy(e)(1)(B) and (e)(4) (1935).

ultra high rehabilitation). Despite these advantages, a therapy fee schedule also has significant disadvantages. Payments under a therapy fee schedule would be based entirely on the units of therapy provided rather than adjusted for a resident's expected need for therapy services. In this respect, the therapy fee schedule is similar to the cost-based system that was replaced by the SNF PPS as mandated by the BBA and would require legislative action⁵. Because payments would be resource-based, shifting to a therapy fee schedule would not address the main critique of the existing therapy payment methodology under the SNF PPS, the incentive to increase provision of therapy services for financial reasons.

4.3.2 Resident Characteristics-Based Options

A case-mix option based on resident characteristics would address the prevailing critique of the SNF PPS. The options in this group that we analyzed differ in the type and source of resident complexity information used to determine case-mix groups. The systems include the New Profiles model (Liu et al. 2007; Leavitt 2006), Diagnosis-Related Groups (DRG) (Cotterill 1986; Liu et al. 2007), MedPAC model (MedPAC 2008, 2013; Garrett and Wissoker 2008; Wissoker and Zuckerman 2012), Post-Acute Care Payment Reform Demonstration (PAC-PRD) (Gage, Deutsch, et al. 2012; Deutsch et al. 2012; Gage, Morley, et al. 2012), private sector (The Moran Company 2008), and resident history options, each described in more detail below.

The New Profiles, DRG, and MedPAC options all aim to move therapy payments in the SNF PPS towards resident-based measures, but each uses different measures of resident status. While the New Profiles and DRG-based approaches incorporate information from both the SNF and the qualifying inpatient hospital stay, the MedPAC option uses SNF data alone and retains a broad categorical measure of resource intensity as a predictor of case-mix. The New Profiles option uses a case-mix classification based entirely on resident characteristics and predicts therapy costs using functional status measures from the SNF setting, diagnoses from the qualifying inpatient hospital stay, and prior use of therapy in the hospital setting. The DRG-based option incorporates DRGs from the qualifying hospital stay, in addition to a limited set of MDS functional status variables, to predict per-stay therapy costs. The MedPAC option relies exclusively on data sources generated by the SNF, and although it includes therapy service utilization as a variable, it is designed to shift the basis of therapy payment toward resident characteristics; the non-therapy changes included in the full MedPAC model also shift payments toward facilities providing high amounts of non-therapy ancillary (NTA) services.

The PAC-PRD option would use resident assessment items developed during the PAC-PRD to develop a resident-characteristics case-mix model. These standardized CARE items cover similar domains as the MDS assessment tool currently used in SNFs, but they may allow

⁵ Social Security Act of 1935, 42 U.S.C. § 1395yy(e)(1)(B) and (e)(4) (1935).

for more refined measures of medical and functional status to explain variation in resident-specific resource costs. Developing and implementing a SNF therapy payment model based on the PAC-PRD findings would require additional analysis, as the PAC-PRD resource intensity models do not constitute a complete resident case-mix payment model.

The private sector option would base payments on clinical characteristics identified via ICD CM diagnosis codes and condition codes reported on SNF claims. This option uses a per-episode payment based on resident characteristics that is adjusted to reflect expected costs at each point in the stay. These components constitute a payment system based on resident characteristics that also recognizes the implications of variation in resource utilization when necessary.

The resident history option uses a resident's health history prior to SNF admission to determine payment. Unlike the other resident characteristics-based case-mix options, the resident history option would draw little to no information from assessment data, replicating the factors included in other resident characteristic options using data sources outside the SNF setting, and then use the same approach as the other options to predict therapy costs and set relative weights.

4.3.3 Outcomes-Based Option

An outcomes-based option would group residents with similar clinical profiles and expected outcomes from therapy. The goal of this option would be to incentivize providers to provide an individualized and appropriate amount of therapy to achieve the desired outcome for a resident. Critical components of this option include defining the range of outcomes expected to result from therapy in a SNF and identifying the resident characteristics likely to affect those outcomes. The BBA does not specifically mention adjusting for expected outcomes, which likely means legislative action is required.⁶

4.3.4 Comparison of Case-Mix Options

All of the case-mix options, with the exception of the therapy fee schedule approach have the potential to strengthen the connection between resident characteristics and therapy services by ending or markedly reducing the use of therapy utilization measures to set payment. Assuming payment rates are adequate, these options would also maintain access to care for residents. Each option uses a different set of resident characteristics as explanatory variables. The MedPAC option has the greatest explanatory power in existing tests, but because it includes service utilization variables, may have limited ability to reduce financial incentives to provide excessive amounts of therapy. The PAC-PRD option may be relatively more effective at

⁶ Social Security Act of 1935, 42 U.S.C. § 1395yy (1935).

targeting reimbursement levels to match expected facility costs through use of the CARE tool. The New Profiles, DRG-based, resident history, and outcomes-based options take information from the preceding hospitalization and may be relatively more effective at setting reimbursement based on the condition requiring rehabilitation rather than the rehabilitation itself. In the short term, the most feasible option to implement is the MedPAC option, which relies exclusively on data already available to SNF providers, followed by the New Profiles and DRG-based options, which have been extensively evaluated on their suitability for adoption.

4.4 Data Sources

The project team aims to be as comprehensive as possible in our research to develop an alternative payment model for SNF therapy services. That includes exploring the current and any potential available data. Our group evaluated the utility of two data sources that could be used to supplement current data: the CARE tool and claims data from the SNF and other settings. SNFs currently use MDS 3.0 to submit resident assessment data, but incorporation of new assessment items from the CARE tool, which include measures for clinical complexity, functional status, cognitive status, and social support factors, may improve payment accuracy. CMS could either incorporate the CARE tool by replacing relevant MDS items with corresponding CARE items or by inserting additional CARE items into the MDS assessment instrument.

Many of the case-mix options described in Section 4.3 utilize information from claims that is not currently used in the SNF PPS, including information from the preceding inpatient hospitalization claims and data from additional Medicare settings. Information from other settings may be considered more reliable than information from the SNF in two ways: first, it may be more standardized or have higher specificity; and second, it may be more objectively measured.

Both data sources have the potential to improve the accuracy of the SNF payment system; the CARE tool provides more granular measures than the existing MDS assessments, while other claims data provide information beyond the SNF's knowledge. Both data sources may also improve coordination across PAC settings by improving the consistency of resident classification. Moreover, incorporating claims from the qualifying inpatient hospital stay may encourage SNF providers to improve communication with hospital-based providers to obtain a better understanding of the resident's medical history. Incorporating the CARE tool into the SNF payment system is more feasible in the short term than incorporating claims data from other settings because the latter would require developing an EHR infrastructure to permit the exchange of data between the SNF setting and other settings.

4.5 Pricing Adjustments

We considered several pricing adjustment mechanisms that may be applied to price the case-mix groups from the systems described in Section 4.3. The project team identified the following seven pricing adjustment options:

- (i) using claims and cost report data to determine the price of SNF therapy inputs,
- (ii) competitive bidding,
- (iii) block pricing,
- (iv) high-cost outlier adjustments,
- (v) short-stay adjustments,
- (vi) VBP mechanisms, and
- (vii) pricing adjustments used by state Medicaid programs.

The first three of these pricing adjustments would function as the primary approaches for pricing the case-mix groups under a revised payment system. The next three options—high-cost outlier adjustments, short-stay adjustments, and VBP mechanisms—represent supplemental approaches for adjusting prices that could be combined with either of the first three options. Finally, the pricing adjustments used by state Medicaid programs represent a mix of primary approaches for setting prices and supplemental approaches for adjusting prices. The remainder of this section describes each of these options, and their ability to improve on the current approach, in turn.

The first pricing adjustment, updating reimbursement rates using cost reports and claims data, would be less costly than the current approach of obtaining resource data from staff time measurement (STM) studies. Most recently, CMS used the 2005 Staff Time and Resource Intensity Verification (STRIVE) study to develop payment rates to support the RUG-IV system, but such studies require considerable time and resources. However, the use of cost reports and claims data may lead to some loss in data quality.

The second pricing adjustment, competitive bidding, could produce a more accurate measure of the market price of SNF care because providers have better information than CMS on their own internal cost structures, the case mix of their resident populations, and their preferred course of treatment for their residents. This information provides a given SNF with more information than CMS on how much it costs that facility to treat a given type of patient while maintaining a particular level of quality. Proponents of competitive bidding models argue that administrative pricing overpays and promotes more variation in payment than warranted, whereas a competitive bidding structure promotes efficiency (Dowd et al. 2005). However, the process of developing and testing the competitive bidding process within the SNF setting would likely face significant implementation challenges.

The third pricing adjustment, block pricing, would vary therapy reimbursement levels over the course of a resident's stay based on typical therapy utilization patterns. Designing a block pricing system would require additional research to determine how utilization patterns change over the course of the average stay. For example, if CMS finds that beneficiaries use progressively fewer services over the course of a stay, CMS could develop a declining block pricing system that reduces reimbursement over time. A block pricing system that accounts for expected changes in utilization over a stay may improve payment accuracy. In response to block pricing, however, providers may adjust resource utilization across stays by clustering discharges just before or after thresholds where the rate is known to increase or decrease. Similarly, under a declining block pricing system, providers may discharge residents early to maximize reimbursement. Implementing a block pricing system would also likely require the passage of legislation since it would alter the existing per-diem basis of payment established by the BBA.⁷

The fourth and fifth pricing adjustments, high-cost outlier and short-stay adjustment payments, could be used to address payment accuracy and access-to-care concerns associated with either the current SNF PPS or a revised payment system. Both of these approaches could also be used in tandem with either of the first three pricing adjustments described above. High-cost outlier payments would be used to reimburse facilities for residents with exceptionally high costs. Conversely short-stay adjustments for residents with abnormally short stays could reduce overpayment for these stays. Using these two approaches within a SNF therapy payment system could address variation in the costs of stays and ensure that access is maintained for high-cost residents. High-cost outlier payments could also be used to mitigate the effects of other payment system components that may negatively impact access to care, such as case-mix options based on resident characteristics or block pricing adjustments. However, implementing an outlier payment policy would require legislation due to the absence in existing law of any explicit outlier authority for the SNF PPS. Congress authorized a similar adjustment for beneficiaries with expected high costs—beneficiaries with acquired immune deficiency syndrome (AIDS)—through the Medicare Modernization Act of 2003.⁸

The sixth pricing adjustment, VBP, would enable CMS to tie reimbursement to the quality of care that the SNFs provide. One of the central challenges in developing a VBP program, however, is identifying a set of reliable and valid measures of resident outcomes associated with therapy. The Protecting Access to Medicare Act of 2014 mandates the establishment of a SNF VBP program by 2019.⁹

⁷ Social Security Act of 1935, 42 U.S.C. § 1395yy(e)(1)(B) and (e)(4) (1935).

⁸ Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Pub. L. No. 108-173 (2003).

⁹ Protecting Access to Medicare Act of 2014, Pub. L. No. 113-93 (2014).

Finally, the seventh pricing adjustment option considers approaches adopted by state Medicaid programs to adjust prices for nursing home stays. Many states promote access to care by providing “add-on” payments above a facility’s reimbursement rate, and some states promote quality of care by using VBP incentives, spending floors on direct care, and spending caps on administrative costs. To promote efficiency, states often limit reimbursement based on mean or median costs of peer facilities or facilities within the state or reward facilities that keep costs under a ceiling.

The impact of the different pricing adjustments on care within the SNF setting is likely to vary considerably. Competitive bidding and VBP place relatively more responsibility on providers to regulate costs and quality and create a system that, in essence, rewards certain facilities at the cost of others. A competitive bidding model is also likely to reduce overall payments from CMS to SNFs through reduced rates for therapy services. The effects of a high-cost outlier or short-stay adjustment payment or a VBP program on payments to SNFs would depend on the funding mechanism—for example, whether the adjustment is designed to be budget neutral. Of the pricing adjustments, the competitive bidding model has the greatest potential to impact care across settings by restricting the total number of SNF providers paid by Medicare, which could substantially alter the PAC landscape.

4.6 Resident Cost-Sharing Alternatives

The final payment component we considered was resident cost-sharing requirements. In particular, the project team considered the effect of modifications to the existing temporal cost-sharing requirements and the use of resource-based cost-sharing. The remainder of this section describes these two cost-sharing alternatives and outlines their advantages and disadvantages. One consideration related to both of these alternatives is that any changes to the existing SNF coinsurance formula would require legislation.¹⁰

The first alternative, temporal cost-sharing, requires residents to pay a fixed rate for a given unit of time. Within the SNF setting, temporal cost-sharing could include either a deductible for the benefit period or a per-diem copayment. Under the deductible approach, the resident would pay for the initial cost of care upon entering the SNF up to a set fixed amount, after which point Medicare would begin paying; this approach is comparable to the deductibles used in the inpatient hospital setting. Currently, because Medicare payments entirely cover the first 20 days of a SNF stay, the 21st day represents a different financial arrangement for the beneficiaries and facilities. Acumen’s own analysis shows that approximately 3.5 percent of Part A SNF residents are in the SNF for exactly 20 days, a higher percentage than for any other stay length, which suggests that the introduction of a cost-sharing requirement affects the provision of

¹⁰ Social Security Act of 1935, 42 U.S.C. § 1395e(a)(3) (1935).

SNF services in a way that may not correspond to resident needs. An advantage of a deductible is that it would encourage residents and facilities to work together to make more deliberate decisions about whether SNF therapy would benefit a resident. Instituting copayments prior to day 21 may also produce an incentive for residents and facilities to make more judicious use of therapy days in the SNF. Both of these approaches, however, could also reduce access to care for residents facing a financial burden; under the deductible approach, some residents in need of SNF therapy services may choose not to enter the SNF, and under the per-diem copayment approach residents may shorten their SNF stay beyond what is clinically advisable. Identifying the impact of these cost-sharing alternatives on access to care would require comparing the costs residents would pay under this approach, accounting for expected reduced utilization of SNF services or shorter length of stay, to cost-sharing under the existing payment system. Finally, since many SNF beneficiaries are dually enrolled, these costs may be shifted to Medicaid or may become bad debt.

The second alternative, resource-based cost-sharing, could help improve the incentive for providers to deliver reasonable and necessary SNF therapy services if CMS maintained the current RUG system. As with temporal cost-sharing, the goal of resource-based cost-sharing would be to incentivize facilities and residents to work together to make more judicious use of SNF therapy services. There are two main options for determining cost sharing under a resource-based model: basing cost sharing on therapy use only and basing cost sharing on therapy use conditional on case mix. Under the first option, all residents would be required to pay copayments proportional to the therapy services they receive. Such a model would apply to all types of residents equally. Under the second system, the copayment could also vary based on therapy use, but conditional on case mix. Certain types of residents would only have a copayment if they were provided therapy above a certain threshold, defined based on a clinical understanding of anticipated therapy needs for the resident profile. This method would take into account that residents with certain characteristics are more likely to require therapy or a higher intensity of therapy than others, but would also still allow flexibility so that a facility could provide therapy to any type of resident. An advantage of varying the copayment schedule according to the resident profile is that such an approach may incentivize better targeting of therapy to certain types of residents by providers and discourage unnecessary amounts of therapy services for others. The thresholds could be set simply (e.g., residents with a surgical hospitalization pay no copay for therapy services while those with a non-surgical hospitalization pay a copay for high or ultra-high therapy) or more complexly. A disadvantage to this approach, however, is that residents may perceive making cost-sharing conditional on case-mix as unfair since different residents receiving the same care would be required to pay different copayment amounts. In addition to the concerns of patient access and equity, CMS would also have to submit any new cost-sharing proposal for congressional authorization.

4.7 Using System Options to Develop Payment Models

We used the review of each of the options described above to develop four payment models approaches from which to choose our recommendation for additional analysis in the next phase of the project. While the review of system options considered modular components of a payment system, the project team combined those components to form more fully developed payment models.

5 RESEARCH FINDINGS AND RECOMMENDATIONS

To formulate recommendations for further development and analysis, we evaluated conceptual approaches to therapy payment that represented the most distinctive features of the various alternatives proposed in the literature and by stakeholders. The project team capitalized on the categorization of the components of payment to identify and evaluate four alternative payment system concepts that represent fundamentally distinct approaches to paying for therapy. In selecting these four concepts, the project team chose to focus on the key characteristics that would differentiate systems given the evaluation criteria, which are discussed below in Section 5.2. The conceptual approaches to rehabilitation therapy payment identified at the culmination of this process are: a resident characteristics model, a hybrid model combining resident characteristics and resource use, a fee schedule, and a competitive bidding model. To identify the subset of payment concepts worthy of further study and specification, the evaluation process assessed each concept on six groups of criteria representing the features of an optimal payment system. The project team then compared the models performing best on the criteria to the current therapy payment methodology under the SNF PPS. Based on the evaluations, the project team recommends developing and testing the resident characteristics model and the hybrid model to establish a recommendation for implementation in the SNF setting.

This section proceeds with a discussion of the evaluation process. Section 5.1 discusses the payment models evaluated by the project team. Section 5.2 discusses the criteria used to rank the relative performance of each payment concept. Finally, Section 5.3 summarizes the results and recommendations.

5.1 Payment Models

The four distinct and separate concepts broadly represent payment system options that were recommended in the literature and by stakeholders. While the review of system options separated possible options into individual components of a payment system (e.g., payment unit, case-mix system, pricing adjustment), the findings and recommendations process focused on choosing broad but distinct concepts representing a general class of payment system. We evaluated four general concepts for determining reimbursement for therapy services in the SNF setting: the resident characteristics model, the hybrid model, the fee schedule, and competitive bidding.

The first payment concept, the resident characteristics model, uses resident information, such as medical, functional, or cognitive status, to group residents with similar clinical characteristics and expected cost of care for the purpose of determining reimbursement. In general, this approach uses existing practice patterns to develop an empirical model of the

relationship between resident characteristics and expected costs of therapy care. Several options discussed in the review of system options fit within this class of payment model.

The second payment concept, the hybrid model, pairs a case-mix classification system with a resource-based pricing adjustment. This conceptual approach is similar to the current SNF PPS, in that it directly incorporates some measure of resource use into its determination of payment. The specific resource pricing adjustment could take a variety of forms, including a fee schedule add-on, block pricing, or an outlier payment adjustment for costly residents.

The third payment concept reimburses for therapy using a fee schedule. In this system, payment amounts are based on the resident's actual therapy use rather than expected resource use. Although consolidated billing in the SNF setting was legislated by the BBA, the literature review and stakeholder outreach conducted for this project found proposals to return to a fee schedule system and increase consistency of therapy payments across Part A and Part B.

The fourth payment system is competitive bidding, which would allow market-based pricing of therapy services through a bidding mechanism. Proponents of competitive bidding models argue that competitive pricing promotes efficiency and reduces unwarranted variation in payment. Competitive bidding could be paired with any resident classification system option, and as such, the project team evaluated this concept directly on the competitive bidding mechanism rather than the effects of the potential classification systems.

5.2 Evaluation Criteria

The first step in determining which conceptual approaches warranted further consideration and specification was to create and rank a set of evaluation criteria. The project team determined that an optimal payment system should satisfy the following six broad criteria:

- (i) Improves payment accuracy for SNF services
- (ii) Improves incentives to provide the appropriate level of care for individuals
- (iii) Feasible to implement in the short-to-medium-term
- (iv) Minimizes start-up and ongoing implementation costs for CMS
- (v) Minimizes burden on stakeholders
- (vi) Reduces impacts on or improves consistency with other settings and payers

Each group contained several related criteria, listed below in Table 5-1, that specified the dimensions that would satisfy the overall goal of the criteria group.

The first three criteria groups—payment accuracy, incentives to provide appropriate level of care, and feasibility—represented essential characteristics for a new system, garnering a higher priority level than the other three groups. Payment concepts must satisfy criteria within these first three groups to be considered viable options for replacing the current system. The first

criteria group, maximizing payment accuracy, represents a central goal of the Medicare program’s payment systems, including the SNF PPS. Second, improving incentives to provide an appropriate level of care for individuals is crucial because the current therapy reimbursement system, which incentivizes SNFs to provide high levels of therapy independent of resident needs, has been the focus of critiques. Finally, feasibility of short- to medium-term implementation is necessary to satisfy CMS’s goal for this project and align payments with expected therapy costs in the near future. Performance on secondary criteria related to implementation costs, stakeholder burden, and unintended impacts on other settings and payers provides additional differentiation among options that are rated highly on the key criteria.

Table 5-1: Summary of Evaluation Criteria

Criteria
1. Improves payment accuracy for SNF therapy services
A. Ability to explain variation in resident-level resource use
B. Uses reproducible, verifiable, and objective characteristics to determine therapy payments
2. Improves incentives to provide appropriate level of care for individuals
A. Incorporates evidence-based resident characteristics predictive of therapy utilization
B. Minimizes incentive to provide more therapy than appropriate given the individual needs of the resident
C. Minimizes incentive to provide less therapy than appropriate given the individual needs of the resident
D. Maintains geographic-based access to skilled nursing services
E. Maintains condition-based access to skilled nursing services
F. Maintains or improves quality of care
3. Feasible to implement in short- to medium-term
A. Prior specification and evaluation of the payment system
B. Considers the impact on residents
C. Considers the impact on providers/MACs/trade association groups
D. Minimizes burden related to legislation requirements
E. Minimizes need for and extent of any pre-implementation demonstration/pilot requirements
4. Minimizes start-up and ongoing implementation costs for CMS
A. Minimize start-up costs of training providers on new system
B. Minimize start-up costs to develop, test, and implement system
C. Improve the predictability and stability of therapy payment
D. Minimize costs associated with system updates
5. Minimizes burden on stakeholders
A. Minimizes new data collection burden
B. Improves the overall predictability of the payment system and reduces system complexity
C. Aligns infrastructure and requirements with future initiatives
6. Reduces impacts on or improves consistency with other settings/payers
A. Minimizes costs and burden to state Medicaid systems
B. Improves consistency with other Medicare benefits
C. Minimizes cost- or resident-shifting across post-acute settings

5.3 Model Evaluations

We rated each of the four payment concepts described in Section 5.1 using the criteria groups listed in Section 5.2 to determine which concepts should be considered candidates for

implementation in the SNF setting. Each concept was rated as weak, moderate, strong, or uncertain on each particular criterion. Using scores on the individual criterion, the project team determined each payment model’s rating for each overall criteria group. Finally, the project team used each payment model’s performance on the criteria groups, with emphasis on the three key criteria groups, to recommend concepts for the next stage of the project.

Table 5-2 shows the performance of each of the payment concepts on the six criteria groups.

Table 5-2: Summary of Concepts' Performance on Criteria Groups

Criteria Group		Resident Characteristics Model	Hybrid Model	Fee Schedule	Competitive Bidding
Key	1 Improves payment accuracy for SNF services	Strong	Moderate-Strong	Weak	Uncertain
	2 Improves incentives to provide appropriate level of care for individuals	Strong	Moderate-Strong	Weak-Moderate	Uncertain
	3 Feasible to implement in short- to medium-term	Strong	Moderate-Strong	Moderate-Strong	Weak
Ancillary	4 Minimizes start-up and ongoing implementation costs for CMS	Moderate-Strong	Moderate	Strong	Weak
	5 Minimizes burden on stakeholders	Strong	Moderate	Moderate	Weak
	6 Reduces impacts on or improves consistency with other settings/payers	Moderate	Moderate	Moderate-Strong	Uncertain

The resident characteristics model performed best, rating strong on all but one criteria group, the ability to reduce the impact on or improve consistency with other settings and payers. By shifting the basis of therapy case-mix groups solely to resident characteristics, this model addressed many of the opportunities for improvement to the SNF PPS that have been identified in the literature and measured through the evaluation criteria. Because such a model could be implemented without legislation, it is also feasible to implement in the short- to medium-term.

The hybrid model was the next best alternative. The model rates moderately strong on the first criteria group because the resource-based adjustment links payment to expended resources, which are less objective and verifiable than resident characteristics, and it rates moderately strong on the second because it minimizes the incentive to underprovide care, but does not minimize the incentive to overprovide care. Because the need for legislation depends on the nature of the resource-based adjustment—legislation would be required if the adjustment alters the existing per-diem basis of payment under the Social Security Act—the hybrid model

performed moderately on feasibility of implementation in the short- to medium-term.¹¹ The model also rated moderately on the remaining criteria groups.

The fee schedule did not perform as well as either the resident characteristics model or the hybrid model, but outperformed competitive bidding. This option would represent a model for therapy payment similar to the one in effect prior to implementation of the SNF PPS. The fee schedule's complete reliance on resource utilization to determine payment fails to address the primary concern identified in the literature – that the provision of therapy services is not determined by patient care needs. Among key criteria groups, the concept is weak on ability to improve payment accuracy for SNF services and weak to moderate on ability to improve incentives to provide appropriate level of care for individuals. The fee schedule is moderately strong on feasibility of implementation in the short- to medium-term; while such a system could utilize the existing payment infrastructure in place for therapy in other settings, it would require legislative action before implementation, as explained above in Section 4.3.1. Among the secondary criteria groups, the concept rated strongly on minimizing implementation costs for CMS, moderately on minimizing the burden on stakeholders, and moderately to strongly on reducing impacts on or improving consistency with other settings and payers.

Competitive bidding's performance on improving payment accuracy, improving incentives to provide appropriate levels of care, and reducing unintended impacts on other settings and payers was uncertain because performance depended on the case-mix system the model used rather than the actual competitive bidding mechanisms. The competitive bidding concept performed weakly on the remaining three criteria groups because it may affect resident access to therapy services and would require legislative action as well as extensive testing prior to implementation, making its horizon to fruition longer than any of the other options.¹²

Finally, the project team compared the resident characteristics model and hybrid model to the current SNF PPS to provide additional context for the recommendation to consider these models in the next stage of the project. On the first two key criteria groups, both models outperformed the current system, which performed weakly.¹³ Because both proposed alternative models would base payments on characteristics that are more easily reproducible and verifiable, both would improve the incentives to better target the level of care for residents, particularly for therapy services. Furthermore, the two proposed alternatives outperformed the SNF PPS on the ancillary criteria groups, as they improve the predictability of the payment system.

¹¹ Social Security Act of 1935, 42 U.S.C. § 1395yy(e)(1)(B) and (e)(4) (1935).

¹² Social Security Act of 1935, 42 U.S.C. § 1395yy(e)(1)(B) and (e)(4) (1935). A competitive bidding system would alter the existing per-diem basis of payment under the Social Security Act.

¹³ The project team did not compare the patient characteristics model and hybrid model against the current SNF PPS on the criteria measuring feasibility of implementation because the current system is already in use.

Based on each concept's performance on the evaluation criteria, we recommended using the resident characteristics and hybrid model concepts to inform the specific models that will be developed and tested in the next phase of the project. Both concepts scored strongly or moderately on all criteria groups, and outperformed the fee schedule and competitive bidding mechanism on the three key criteria groups. Importantly, both concepts also outperformed the SNF PPS when evaluated on the key and ancillary criteria groups. To develop the strongest alternative to the current therapy payment methodology under the SNF PPS, the project team proposed moving forward with these two concepts.

6 NEXT STEPS

In the next phase of this project, we will develop and analyze the two recommended payment model concepts. Building on the work conducted over the past year, the project team will develop each concept into a fully specified model suitable for implementation. The work will progress through four distinct stages: developing an analysis plan, conducting empirical analyses, soliciting and incorporating feedback from a technical expert panel, and summarizing findings.

As the first step, the project team will develop an analysis plan for evaluating and testing a resident characteristics model and a hybrid model. The analysis plan will specify the criteria for evaluating each of the models, the statistical plan for performing testing, and the data to be used to conduct the analyses. Because the analyses will not only assess the impact of payment system changes on the overall resident and provider populations, but also on subpopulations of interest (e.g., rural SNFs), the analysis plan will also describe the identification of these subpopulations.

The project team will then conduct necessary data analyses to evaluate the recommended models and to determine which of these alternatives should replace the existing therapy payment methodology under the SNF PPS. Following the strategy laid out in the analysis plan, the project team will systematically construct a case-mix model for adjusting therapy payments that balances the use of currently available and potential additional data with the feasibility and cost of adding complexity to the model. We will assess each potential element of the case-mix system to determine its contribution to the system's ability to predict variation in therapy costs. In building the models, we will consider potential changes in service provision, the adequacy of provider reimbursements, and the burden associated with any data collection. The team will also analyze the interaction between the pricing adjustments (e.g., a fee schedule add-on, outlier payment, or block pricing adjustment) in the hybrid model and case-mix classification variations.

Next, the project team will establish a technical expert panel with representation among groups such as providers educators, researchers, beneficiary advocates, clinicians, consultants, government experts, and representatives from health care, nursing home, and other related industry associations to provide feedback on our research efforts and recommendations. Stakeholders will provide valuable insight into the key issues regarding payment reform options. The project team will summarize the TEP's feedback and the resulting changes in the proposed models.

Finally, the project team will submit a recommendation for which model tested during Option Period 1 should be implemented as part of the SNF PPS. We will summarize the criteria applied to assess the candidate models and how these criteria will ensure an improved

methodology for therapy payment within the SNF PPS. We will also describe our recommendation for an alternative therapy payment model and provide the background and documentation necessary to support our recommendation. This final recommendation will provide the basis for work in Option Period 2, in which the project team will perform additional analyses needed to finalize the recommended model for implementation.

REFERENCES

- Acumen, LLC. 2012a. "Discharge_Indication_05JUL2012." Burlingame, CA : Acumen, LLC.
- . 2012b. "Qual_IP_Days_06DEC2012." Burlingame, CA : Acumen, LLC.
- . 2012c. "SNF Summary Statistics." Burlingame, CA : Acumen, LLC.
- ADL Data Systems. 2014. "Case Mix Information 2012." Hawthorne, NY: ADL Data Systems. Accessed April 21.
http://www.adldata.com/help/MDS30/Reference_Sheets/Case_Mix_Information_2012.pdf.
- American Thoracic Society. 2007. "Functional Status." American Thoracic Society Quality of Life Resource. Accessed April 16, 2014. qol.thoracic.org/sections/key-concepts/functional-status.html.
- Angelelli, J., K. H. Wilbur, and R. Myrtle. 2000. "A Comparison of Skilled Nursing Facility Rehabilitation Treatment and Outcomes Under Medicare Managed Care and Medicare Fee-for-Service Reimbursement." *The Gerontologist* 40(6): 646-653.
- Arling, G., and B. Daneman. 2002. "Nursing Home Case-Mix Reimbursement in Mississippi and South Dakota." *Health Services Research* 37(2): 377-395.
- Blum, J. 2013. "Statement on Post-Acute Care in the Medicare Program before the U.S. House Committee on Ways and Means, Subcommittee on Health." Retrieved from http://waysandmeans.house.gov/uploadedfiles/blum_testimony_final_06-14-2013.pdf.
- Briesacher, B. A., T. S. Field, J. Baril, and J. H. Gurwitz. 2008. "Can Pay-for-Performance Take Nursing Home Care to the Next Level?" *Journal of the American Geriatrics Society* 56(10): 1937–1939.
- . 2009. "Pay-for-Performance in Nursing Homes." *Health Care Financing Review* 30(3), 1-13.
- Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy. 2010. *Post-Acute and Long-Term Care: A Primer on Services, Expenditures and Payment Methods*. Washington, DC: Assistant Secretary for Planning and Evaluation. <http://aspe.hhs.gov/daltcp/reports/2010/paltc.pdf>.
- Carpenter-Mason, B. 1998. "Implications for Home Health and Hospice Care under the New Prospective Payment System." *Home Health Care Management & Practice* 10(6): 19-24.
- Carter, C., A. B. Garrett, and D. Wissoker. 2012. "Reforming Medicare Payments to Skilled Nursing Facilities to Cut Incentives for Unneeded Care and Avoiding High-Cost Patients." *Health Affairs* 31(6): 1303-1313.
- Carter, G. M., M. B. Buntin, O. Hayden, S. M. Paddock, D. A. Relles, G. Ridgeway, M. E. Totten, and B. O. Wynn. 2002. *Analyses for the Initial Implementation of the Inpatient Rehabilitation Facility Prospective Payment System*. Santa Monica, CA: RAND Corporation. http://www.rand.org/pubs/monograph_reports/MR1500.html.

- Centers for Medicare & Medicaid Services. 1998. “Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities, Interim Final Rule.” *Federal Register* 63(91).
- . 2003. “Chapter 8: Coverage of Extended Care (SNF) Services Under Hospital Insurance.” *Medicare Benefit Policy Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2004. *The Inpatient Rehabilitation Facility—Patient Assessment Instrument (IRF-PAI) Training Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2005a. *CMS Quality Improvement Roadmap*. Baltimore, MD: Centers for Medicare & Medicaid Services.
<http://www.cms.gov/Medicare/Coverage/CouncilonTechInnov/downloads/qualityroadmap.pdf>.
- . 2005b. “Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities, Proposed Rule.” *Federal Register* 70(96): 29070-29162.
- . 2005c. *Staff Time and Resource Intensity Verification*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2007a. “Appendix PP – Guidance to Surveyors for Long Term Care Facilities.” *State Operations Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2007b. “Medicare Program; Competitive Acquisition for Certain Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS) and Other Issues.” *Federal Register* 72(68): 17992-18090.
- . 2007c. “Medicare Program; Proposed Changes to the Hospital Inpatient Prospective Payment Systems and Fiscal Year 2008 Rates.” *Federal Register* 72(162): 47129-48175.
- . 2009a. “Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities for FY 2010; Minimum Data Set, Version 3.0 for Skilled Nursing Facilities and Medicaid Nursing Facilities, Final Rule.” *Federal Register* 74(153):40288-40395.
- . 2009b. “Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities for FY 2010; Minimum Data Set, Version 3.0 for Skilled Nursing Facilities and Medicaid Nursing Facilities, Proposed Rule.” *Federal Register* 74(90): 22208-22316.
- . 2010a. “Chapter 1: Inpatient Hospital Services Covered Under Part A.” *Medicare Benefit Policy Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2010b. “Chapter 3: Inpatient Hospital Billing.” *Medicare Claims Processing Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2010c. *Medicare & Medicaid Statistical Supplement*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2010d. “Medicare and Medicaid Programs; Electronic Health Record Incentive Program, Final Rule.” *Federal Register* 75(144): 44313-44588.

- . 2011a. "Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities for FY 2012, Final Rule." *Federal Register* 76(152): 48485-48562.
- . 2011b. "MLN Matters Number MM7518 Revised: Update to Hospice Payment Rates, Hospice Cap, Hospice Wage Index and the Hospice Pricer for FY 2012." Baltimore, MD: Centers for Medicare & Medicaid Services. <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM7518.pdf>.
- . 2011c. "MLN Matters Number MM7657: Home Health Prospective Payment System Rate (HH PPS) Update for Calendar Year (CY) 2012." Baltimore, MD: Centers for Medicare & Medicaid Services. <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM7657.pdf>.
- . 2012a. "Chapter 8: Coverage of Extended Care (SNF) Services Under Hospital Insurance." *Medicare Benefit Policy Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2012b. "Chapter 9: Coverage of Hospice Services Under Hospital Insurance." *Medicare Benefit Policy Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2012c. "Chapter 10: Home Health Agency Billing." *Medicare Claims Processing Manual*. Baltimore, MD: Centers for Medicare & Medicaid Services.
- . 2012d. "Historical Questions & Answers on SNF Consolidated Billing." Baltimore, MD: Centers for Medicare & Medicaid Services. <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/SNFPSP/Downloads/historyQA.pdf>.
- . 2012e. "How Do I File a Claim?" Baltimore, MD: Centers for Medicare & Medicaid Services. <http://www.medicare.gov/claims-and-appeals/file-a-claim/file-a-claim.html>.
- . 2012f. "Medicare and Medicaid Programs; Hospital Outpatient Prospective and Ambulatory Surgical Center Payment Systems and Quality Reporting Programs Hospital Value-Based Purchasing Program; Organ Procurement Organizations; Quality Improvement Organizations; Electronic Health Records (EHR) Incentive Program; Provider Reimbursement Determinations and Appeals." *Federal Register* 78(237): 74825-75200.
- . 2012g. "Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Fiscal Year 2013 Rates ; Hospitals' Resident Caps for Graduate Medical Education Payment Purposes; Quality Reporting Requirements for Specific Providers and for Ambulatory Surgical Centers." *Federal Register* 77(92): 27869-28192.
- . 2012h. *Report to Congress: Fraud Prevention System First Implementation Year*. Baltimore, MD: Centers for Medicare & Medicaid Services. <http://www.stopmedicarefraud.gov/fraud-rtc12142012.pdf>.
- . 2013a. *CMS Skilled Nursing Facility Therapy Payment Models Listening Session, February 13, 2013*. (statement of Matthew Brown, CMS, Office of Public Engagement).

- . 2013b. “Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities, Proposed Rule.” *Federal Register* 78(87): 26437-26480.
- . 2014. “MLN Matters Number SE1128: Prohibition on Balance Billing Qualified Medicare Beneficiaries (QMBs).” Baltimore, MD: Centers for Medicare & Medicaid Services. <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE1128.pdf>.
- Chen, L., and D. G. Shea. 2002. “Does Prospective Payment Really Contain Nursing Home Costs?” *Health Services Research* 37(2): 251-271.
- Clauser, S. B., and Bierman, A. S. 2003. “Significance of Functional Status Data for Payment and Quality.” *Health Care Financing Review* 24(3): 1-12.
- Commonwealth of Massachusetts. 2009. *Standard Payments to Nursing Facilities*. Boston, MA: Commonwealth of Massachusetts, Executive Office of Health and Human Services. <http://www.lawlib.state.ma.us/source/mass/cmr/cmrtxt/101CMR206.pdf>.
- Cosgrove, J. 2012. *End-Stage Renal Disease: Reduction in Drug Utilization Suggests Bundled Payment is Too High*. Washington, DC: Government Accountability Office. <http://www.gao.gov/assets/660/650667.pdf>.
- Cotterill, P. G. 1986. “Testing a Diagnosis-Related Group Index for Skilled Nursing Facilities.” *Health Care Financing Review* 7(4): 75-85.
- Cotterill, P. G., and Gage, B. J. 2002. “Overview: Medicare Post-Acute Care Since the Balanced Budget Act of 1997.” *Health Care Financing Review* 24(2): 1-6.
- Cramton, P., and B. Katzman. 2010. “Reducing Healthcare Costs Requires Good Market Design.” *The Economists’ Voice* 7(4).
- Cromwell, J., M. G. Trisolini, G. C. Pope, J. B. Mitchell, and L. M. Greenwald, eds. 2011. *Pay for Performance in Health Care: Methods and Approaches*. Research Triangle Park, NC: RTI Press. <http://www.rti.org/pubs/rtipress/mitchell/bk-0002-1103-ch11.pdf>.
- Deutsch, A., T. Kline, C. Kelleher, L. M. Lines, L. Coats, D. Garfinkel, T. Mallinson, and B. Gage, B. 2012. *Analysis of Crosscutting Medicare Functional Status Quality Metrics Using the Continuity and Assessment Record and Evaluation (CARE) Item Set*. Research Triangle Park, NC: RTI International. http://aspe.hhs.gov/health/reports/2013/CrosscuttingMedicare/rpt_crossmedi.pdf.
- Dey, J.G., M. Johnson, W. Pajerowski, M. Tanamor, and A. Ward. 2011. *Home Health Study Report*. Washington, DC: L&M Policy Research. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HomeHealthPPS/downloads/HHPPS_LiteratureReview.pdf.
- Diamond, G., and S. Kaul. 2009. “Evidence-Based Financial Incentives for Healthcare Reform: Putting It Together.” *Circulation: Cardiovascular and Quality Outcomes* 2: 134-140.
- Dowd, B. E., R. F. Coulam, R. Teldman, and S. D. Pizer. 2005. “Fee-for-Service Medicare in a Competitive Market Environment.” *Health Care Financing Review* 27(2): 113-126.

- Dube, N. 2009. "Massachusetts' Medicaid Nursing Home Payment System." Hartford, CT: Office of Legislative Research, Connecticut General Assembly. Accessed April 22, 2014. <http://www.cga.ct.gov/2009/rpt/2009-R-0041.htm>.
- Dummit, L. A. 2011. *Issue Brief No. 841: Medicare's Bundling Pilot: Including Post-Acute Care Services*. Washington, DC: National Health Policy Forum. http://www.nhpf.org/library/issue-briefs/IB841_BundlingPostAcuteCare_03-28-11.pdf.
- Forester, T., and R. Simione. 2011. "Hospice Payment Reform: A Look into the Future." Address presented at 17th Annual National Association for Homecare & Hospice Financial Management Conference & Exposition, San Diego, CA, July 2011.
- Fries, B. E. 1990. "Comparing Case-Mix Systems for Nursing Home Payment." *Health Care Financing Review* 11(4): 103-19.
- Fries, B. E., D.P. Schneider, W.J. Foley, and M. Dowling. 1989. "Case-Mix Classification of Medicare Residents in Skilled Nursing Facilities: Resource Utilization Groups (RUG-T18)." *Medical Care* 27(9): 843-858.
- Fries, B. E., D. P. Schneider, W. J. Foley, M. Gavazzi, R. Burke, and E. Cornelius. 1994. "Refining a Case-Mix Measure for Nursing Homes: Resource Utilization Groups (RUG-III)." *Medical Care* 32(7): 668-685.
- Gage, B. 1999. "Impact of the BBA on Post-Acute Utilization." *Health Care Financing Review* 20(4): 103-126.
- Gage, B., A. Deutsch, L. Smith, C. Schwartz, J. Ross, L. Coots, K. Reilly, J. H. Abbate, K. Shamsuddin, and B. Silver. 2012. *The Development and Testing of the Continuity Assessment Record and Evaluation (CARE) Item Set. Volume 1-3*. Research Triangle Park, NC: RTI International.
- Gage, B., M. Morley, M. Ingber, and L. Smith. 2011. *Post-Acute Care Episodes Expanded Analytic File*. Research Triangle Park, NC: RTI International. <http://aspe.hhs.gov/health/reports/2011/PACexpanded/index.html>.
- Gage, B., M. Morley, L. Smith, M. Ingber, A. Deutsch, T. Kline, J. Dever, J. Abbate, R. Miller, B. Lyda-McDonald, C. Kelleher, D. Garfinkel, J. Manning, C. M. Murtaugh, M. Stineman, and T. Mallinson. 2012. *Post-Acute Care Payment Reform Demonstration Final Report*. Research Triangle Park, NC: RTI International.
- Garrett, B., and D. A. Wissoker. 2008. *Modeling Alternative Designs for a Revised PPS for Skilled Nursing Facilities*. Washington, DC: Medicare Payment Advisory Commission.
- Gold, M., M. Hudson, G. Jacobson, and T. Neuman. 2010. *Medicare Advantage 2010 Data Spotlight: Benefits and Cost Sharing*. Menlo Park, CA: Kaiser Family Foundation. Accessed April 22, 2014. <http://www.kff.org/medicare/upload/8047.pdf>.
- Government Accountability Office. 2000. *Prospective Payment System Could Reverse Recent Declines in Spending*. Washington, DC: Government Accountability Office. <http://www.gao.gov/assets/230/229594.pdf>.
- . 2002. *Providers Have Responded to Medicare Payment Systems By Changing Practices*. Washington, DC: Government Accountability Office. <http://www.gao.gov/products/GAO-02-841>.

- . 2011. *Nursing Homes: Private Investment Homes Sometimes Differed from Others in Deficiencies, Staffing, and Financial Performance*. Washington, D.C.: U.S. Government Accountability Office. <http://www.gao.gov/products/GAO-11-571>.
- Grabowski, D. 2010. *Post-Acute and Long-Term Care: A Primer on Services, Expenditures and Payment Methods*. Washington, DC: Office of the Assistant Secretary for Planning and Evaluation. <http://aspe.hhs.gov/daltcp/reports/2010/paltc.pdf>.
- Grabowski, D. C., P. J. Huckfeldt, N. Sood, J. J. Escarce, and J. P. Newhouse. 2012. “Medicare Postacute Care Payment Reforms Have Potential to Improve Efficiency of Care, but May Need Changes to Cut Costs.” *Health Affairs* 31(9): 1941-1950.
- Hackbarth, G. M. 2009. Public Comment on “Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities for FY 2010; Minimum Data Set, Version 3.0 for Skilled Nursing Facilities and Medicaid Nursing Facilities; Proposed Rule” on behalf of the Medicare Payment Advisory Commission. http://www.medpac.gov/documents/06292009_SNF_COMMENTcc.pdf.
- Health Services Advisory Group, Inc. 2012. *A Blueprint for the CMS Measures Management System*. Phoenix, AZ: Health Services Advisory Group, Inc. <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-instruments/MMS/Downloads/BlueprintVolume1-combined-v90.pdf>
- Hittle, D. F, E. J. Nuccio, and A. A. Richard. 2011. *Evaluation of the Medicare Home Health Pay-for-Performance Demonstration. CY2008 Report—Volume 1: Agency Characteristics, Costs, and Quality Measure Performance among Treatment, Control, and Non-Participant Groups*. Aurora, CO: University of Colorado, Anschutz Medical Campus, Division of Health Care Policy and Research. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Reports/downloads/HHP4P_Demo_Eval_2008_Vol1.pdf.
- Hustey, F. M. and R. M. Palmer. 2010. “An Internet-Based Communication Network for Information Transfer During Patient Transitions from Skilled Nursing Facility to the Emergency Department.” *Journal of the American Geriatrics Society* 58(6): 1148-1152.
- Hutt, E., M. Ecord, T. B. Eilertsen, E. Frederickson, J. C. Kowalsky, and A. M. Kramer. 2001. “Prospective Payment for Nursing Homes Increased Therapy Provision without Improving Community Discharge Rates.” *Journal of the American Geriatrics Society* 49(8): 1071-1079.
- Institute of Medicine. 2013. *Interim Report of the Committee on Geographic Variation in Health Care Spending and Promotion of High-Value Health Care: Preliminary Committee Observations*. Washington, DC: The National Academies Press. <http://www.iom.edu/Reports/2013/Geographic-Variation-in-Health-Care-Spending-and-Promotion-of-High-Care-Value-Interim-Report.aspx>.
- John Snow, Inc. 2009. *Lessons Learned from Electronic Health Record Implementation at Three North Dakota Critical Access Hospitals*. Denver, CO: John Snow, Inc. http://ruralhealth.und.edu/projects/flex/pdf/lessons_learned.pdf.
- Kautter, J. and G. C. Pope. 2001. *Predictive Accuracy of Diagnostic Cost Group (DCG) Risk Adjustment Models Final Report*. Waltham, MA: Health Economics Research, Inc.

- Konetzka, R. T., D. Yi, E. C. Norton, and K. E. Kilpatrick. 2004. "Effects of Medicare Payment Changes on Nursing Home Staffing and Deficiencies." *Health Services Research* 39(3): 463-488.
- Kramer, A., M. Kaehny, A. Richard, and K. May. 2010. *Survey Questions for EHR Adoption and Use in Nursing Homes*. Denver, CO: University of Colorado, Denver, Division of Health Care Policy and Research. <http://aspe.hhs.gov/daltcp/reports/2010/EHRques.pdf>
- Leavitt, M. 2006. *Report to Congress: Patient Classification under Medicare's Prospective Payment System for Skilled Nursing Facilities*. Washington, DC: U.S. Department of Health and Human Services. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/SNFPPS/downloads/rc_2006_pc_ppsnf.pdf.
- Levinson, D. 2009. *Abberant Medicare Home Health Outlier Payment Patterns in Miami-Data County and Other Geographic Areas in 2008*. Washington, DC: Office of the Inspector General. <https://oig.hhs.gov/oei/reports/oei-04-08-00570.pdf>.
- . 2010. *Questionable Billing in Skilled Nursing Facilities*. Washington, DC: Office of the Inspector General. <https://oig.hhs.gov/oei/reports/oei-02-09-00202.pdf>.
- . 2012. *Inappropriate Payments to Skilled Nursing Facilities Cost Medicare More than a Billion Dollars in 2009*. Washington, DC: Office of Inspector General. <http://oig.hhs.gov/oei/reports/oei-02-09-00200.pdf>.
- Liu, K. and E. Jones. 2007. *Closures of Hospital-Based SNF Units: Insights from Interviews with Administrators, Discharge Planners and Referring Physicians*. Washington, DC: Urban Institute. http://www.medpac.gov/documents/Mar07_Hospitalbased_SNFs_CONTRACTOR.pdf.
- Liu, K., B. Garrett, S. Long, S. Maxwell, Y. C. Shen, D. Wissoker, and J. Buchanan. 2007. *Final Report to CMS: Options for Improving Medicare Payment for Skilled Nursing Facilities*. Washington, DC: Urban Institute. http://www.urban.org/UploadedPDF/411526_nursing_facilities.pdf
- Miller, E. A., V. Mor, D. C. Grabaowski, and P. L. Gozalo. 2009. "The Devil's in the Details: Trading Policy Goals for Complexity in Medicaid Nursing Home Reimbursement." *Journal of Health Politics, Policy and Law* 34(1): 93-135.
- McCall, N., J. Korb, A. Petersons, and S. Moore. 2003. "Reforming Medicare Payment: Early Effects of the 1997 Balanced Budget Act on Postacute Care." *Milbank Quarterly* 81(2): 277-303.
- . 2004. "Decreased Home Health Use: Does It Decrease Satisfaction?" *Medical Care Research and Review* 61(1): 64-88.
- McGuire, C. 2010. *Medicaid Policy Cooperative Agreement Project: Case Mix Background*. Augusta, ME: Maine Department of Health and Human Services. <http://www.maine.gov/dhhs/reports/long-term-care-report-attachment.pdf>.
- Measure Application Partnership. 2013. *MAP Pre-Rulemaking Report: 2013 Recommendations on Measures Under Consideration by HHS*. Washington, D.C.: National Quality Forum.

- Medicare Payment Advisory Commission. 2006. *Report to Congress: Increasing the Value of Medicare*. Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/jun06_entirereport.pdf.
- . 2008. *Report to the Congress: Reforming the Delivery System*. Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/jun08_entirereport.pdf.
- . 2009. *Report to the Congress: Medicare Payment Policy*. Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/jun09_entirereport.pdf.
- . 2010. *Report to the Congress: Medicare Payment Policy*. Washington, DC: Medicare Payment Advisory Commission. http://www.medpac.gov/chapters/Mar10_EntireReport.pdf.
- . 2011. *Report to Congress: Medicare Payment Policy*. Washington, DC: Medicare Payment Advisory Commission. http://medpac.gov/documents/Mar11_EntireReport.pdf.
- . 2012. *A Data Book: Health Care Spending and the Medicare Program*. Washington, DC: Medicare Payment Advisory Commission.
<http://www.medpac.gov/documents/Jun12DataBookEntireReport.pdf>.
- . 2013a. “Medicare Payment Basics: Durable Medical Equipment Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_DME.pdf.
- . 2013b. “Medicare Payment Basics: Home Health Care Services Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_HHA.pdf.
- . 2013c. “Medicare Payment Basics: Hospice Services Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_hospice.pdf.
- . 2013d. “Medicare Payment Basics: Hospital Acute Inpatient Services Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_hospital.pdf.
- . 2013e. “Medicare Payment Basics: Inpatient Rehabilitation Facilities Services Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_IRF.pdf.
- . 2013f. “Medicare Payment Basics: Long-Term Care Hospitals Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_LTCH.pdf.
- . 2013g. “Medicare Payment Basics: Medicare Advantage Program Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_MA.pdf.
- . 2013h. “Medicare Payment Basics: Outpatient Dialysis Services Payment System.” Washington, DC: Medicare Payment Advisory Commission.
http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_dialysis.pdf.

- . 2013i. “Medicare Payment Basics: Outpatient Hospital Services Payment System.” Washington, DC: Medicare Payment Advisory Commission. http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_OPD.pdf.
- . 2013j. “Medicare Payment Basics: Outpatient Therapy Services Payment System.” Washington, DC: Medicare Payment Advisory Commission. http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_OPT.pdf.
- . 2013k. “Medicare Payment Basics: Part D Payment System.” Washington, DC: Medicare Payment Advisory Commission. http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_PartD.pdf.
- . 2013l. “Medicare Payment Basics: Skilled Nursing Facility Services Payment System.” Washington, DC: Medicare Payment Advisory Commission. http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_SNF.pdf.
- . 2013m. *Report to the Congress: Medicare and the Health Care Delivery System*. Washington, DC: Medicare Payment Advisory Commission. http://www.medpac.gov/documents/Jun13_EntireReport.pdf.
- . 2013n. *Report to the Congress: Medicare Payment Policy*. Washington, DC: Medicare Payment Advisory Commission. http://www.medpac.gov/documents/Mar13_EntireReport.pdf.
- Merlob, B., C. Plott, and Y. Zhang. 2012. “The CMS Auction: Experimental Studies of a Median-Bid Procurement Auction with Non-Binding Bids.” *The Quarterly Journal of Economics* 127(2): 793-827.
- Milbank Memorial Fund. 2003. *Implementing the Resident Assessment Instrument: Case Studies of Policymaking for Long-Term Care in Eight Countries*. New York, NY: Milbank Memorial Fund. <http://www.milbank.org/publications/milbank-reports/85-reports-implementing-the-resident-assessment-instrument-case-studies-of-policymaking-for-long-term-care-in-eight-countries>.
- Miller, E. A., V. Mor, D. C. Grabaowski, and P. L. Gozalo. 2009. “The Devil’s in the Details: Trading Policy Goals for Complexity in Medicaid Nursing Home Reimbursement.” *Journal of Health Politics, Policy and Law* 34(1): 93-135.
- Mor, V., O. Intrator, Z. Feng, and D. C. Grabowski. 2010. “The Revolving Door of Rehospitalization from Skilled Nursing Facilities.” *Health Affairs* 29(1): 57-64.
- The Moran Company. 2008. *A Prospective Payment System for Medicare Part B Therapy: Episode of Care Payment Adjusted for Patient Condition, Final Report*. Arlington, VA: The Moran Company.
- Nelson, L. 2012. *Lessons from Medicare's Demonstration Projects on Value-Based Payment*. Washington, DC: Congressional Budget Office. http://www.cbo.gov/sites/default/files/cbofiles/attachments/WP2012-02_Nelson_Medicare_VBP_Demonstrations.pdf.
- Neuman, T., G. Jacobson, M. Hudson, and M. Gold. 2010. *Medicare Advantage 2010 Data Spotlight: Benefits and Cost-Sharing*. Menlo Park, CA: Henry J. Kaiser Family Foundation. <http://www.kff.org/medicare/upload/8047.pdf>.

- Pope, G. C., R. P. Ellis, A. S. Ash, J. Z. Ayanian, D. W. Bates, H. Burstin, L. I. Iezzoni, E. Marcantonio, and B. Wu. 2000. *Diagnostic Cost Group Hierarchical Condition Category Models for Medicare Risk Adjustment: Final Report*. Waltham, MA: Health Economics Research, Inc. http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Reports/downloads/pope_2000_2.pdf.
- Richard, A., M. Kaehny, K. May, and A. Kramer. 2009. *Literature Review and Synthesis: Existing Surveys on Health Information Technology, Including Surveys on Health Information Technology in Nursing Homes and Home Health*. Denver, CO: University of Colorado, Denver, Division of Health Care Policy and Research. <http://aspe.hhs.gov/daltcp/reports/2009/HITlitrev.pdf>.
- Romano, P., and D. Mark. 1994. "Bias in the Coding of Hospital Discharge Data and Its Implications for Quality Assessment." *Medical Care* 32(1): 81-90.
- RTI International. 2012. *Developing Outpatient Therapy Payment Alternatives (DOTPA): 2009 Resource Utilization Report*. Research Triangle Park, NC: RTI International.
- Rudder, C., R. J. Molloy, J. Holt, and B. Mathuria. 2009. *Modifying the Case-Mix Medicaid Nursing Home System to Encourage Quality, Access and Efficiency*. New York, NY: Long-Term Care Community Coalition. http://www.nursinghome411.org/documents/finalnationalversionofLTCCC reimbursementstudyreportcolor_000.pdf.
- Saitto, C., C. Marino, D. Fusco, M. Arca, and C. A. Perucci. 2005. "Toward a New Payment System for Inpatient Rehabilitation, Part II: Reimbursing Providers." *Medical Care* 43(9): 856-864.
- Silver, B., B. Lyda-McDonald, and B. Gage. 2013. *Developing Outpatient Therapy Payment Alternatives (DOTPA): 2010 Utilization Report*. Research Triangle Park, NC: RTI International.
- Sood, N., P. J. Huckfeldt, D. C. Grabowski, J. P. Newhouse, and J. J. Escarce. 2011a. *The Effect of Prospective Payment on Admission and Treatment Policy: Evidence from Inpatient Rehabilitation Facilities*. Cambridge, MA: National Bureau of Economic Research. <http://www.nber.org/papers/w17125>.
- Sood, N., P. J. Huckfeldt, J. J. Escarce, D. C. Grabowski, and J. P. Newhouse. 2011b. "Medicare's Bundled Payment Pilot for Acute and Postacute Care: Analysis and Recommendations on Where to Begin." *Health Affairs* 30(9): 1708-1717.
- Stineman, M. G., J. J. Escarce, J. E. Goin, B. B. Hamilton, C. V. Granger, and S. V. Williams. 1994. "A Case-Mix Classification System for Medical Rehabilitation." *Medical Care* 32(4): 366-379.
- Stineman, M. G., C. J. Tassoni, J. J. Escarce, J. E. Goin, C. V. Granger, R. C. Fiedler, and S. V. Williams. 1997. "Development of Function-Related Groups Version 2.0: A Classification System for Medical Rehabilitation." *Health Services Research* 32(4): 529-548.
- Strunk, E. R. 2011. "Designing a Skilled Nursing Facility Value-Based Purchasing Program." *GeriNotes* 18(3): 21-23.

- TennCare. 2012. *Nursing Facility Level of Care (LOC) Guide for TennCare CHOICES and PACE*. Nashville, TN: Long Term Service & Supports, TennCare.
<http://www.tn.gov/tenncare/forms/nflocguide.pdf>.
- Turner-Stokes, L., S. Sutch, R. Dredge, and K. Eager. 2012. “International Casemix and Funding Models: Lessons for Rehabilitation.” *Clinical Rehabilitation* 26(3): 195-208.
- U.S. Department of Health and Human Services. 2011a. *Report to Congress: Plan to Implement a Medicare Home Health Agency Value-Based Purchasing Program*. Washington, DC: U.S. Department of Health and Human Services.
<http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HomeHealthPPS/downloads/stage-2-NPRM.PDF>.
- . 2011b. *Report to Congress: Plan to Implement a Medicare Skilled Nursing Facility Value-Based Purchasing Program*. Washington, DC: U.S. Department of Health and Human Services. <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/SNFPPS/Downloads/SNF-VBP-RTC.pdf>.
- . 2012. “New Report: Competitive Bidding Saving Money for Taxpayers and People With Medicare.” Washington, DC: U.S. Department of Health and Human Services.
<http://www.hhs.gov/news/press/2012pres/04/20120418a.html>.
- U.S. Senate Committee on Finance. 2011. “Press Release: Stark, Baucus Release GAO Report Showing Private-Investment Nursing Homes Target Higher-Paying Beneficiaries.” Washington, DC: U.S. Senate Committee on Finance.
<http://www.finance.senate.gov/newsroom/chairman/release/?id=74b917fd-db49-4755-85ff-d580f6558a08>.
- U.S. House Committee on Small Business. 2012. “Subcommittee Hearings: Medicare’s Durable Medical Equipment Competitive Bidding Program: How Are Small Suppliers Faring?” Washington, DC: U.S. House Committee on Small Business, Subcommittee on Healthcare and Technology.
<http://smallbusiness.house.gov/calendar/eventsingle.aspx?EventID=307385>
- Ubokudom, S. E., J. A. Woods, and L. S. Schalk. 2002. “The Effects of Case-Mix Reimbursement on Ohio Medicaid Nursing Home Costs.” *Policy Studies Journal* 30(3): 321-342.
- Werner, R. M., R. T. Konetzka, and K. Liang. 2010. “State Adoption of Nursing Home Pay-for-Performance.” *Medical Care Research and Review* 67(3): 364-377.
- White, A., D. Hurd, T. Moore, A. Kramer, D. Hittle, and R. Fish. 2009. *Nursing Home Value-Based Purchasing Demonstration: Design Refinements*. Washington, DC: Abt Associates Inc. http://www.cms.gov/Medicare/Demonstration-Projects/DemoProjectsEvalRpts/downloads/NHP4P_Refinements_Report.pdf.
- Wissoker, D. A. and S. Zuckerman. 2012. *Impacts of a Revised Payment System for SNFs*. Washington, DC: The Urban Institute.
http://www.medpac.gov/documents/Mar12_Impacts_RevisedPaymentSystemSNFs_CONTRACTOR.pdf.

- Wodchis, W. P., B. E. Fries, and R. A. Hirth. 2004. "The Effect of Medicare's Prospective Payment System on Discharge Outcomes of Skilled Nursing Facility Residents." *Inquiry* 41(4): 418-434.
- Wright, S. 2012. *Memorandum Report: Supplier Billing for Diabetes Test Strips and Inappropriate Supplier Activities in Competitive Bidding Areas*. Washington, DC: Office of Inspector General. <https://oig.hhs.gov/oei/reports/oei-04-11-00760.pdf>.
- Yip, J., K. H. Wilber, and R. C. Myrtle. 2002. "The Impact of the 1997 Balanced Budget Amendment's Prospective Payment System on Patient Case Mix and Rehabilitation Utilization in Skilled Nursing." *The Gerontologist* 42(5): 653-660.
- Zhang, N. J., L. Unruh, and T. T. Wan. 2008. "Has the Medicare Prospective Payment System Led to Increased Nursing Home Efficiency?" *Health Services Research* 43(3): 1043-1061.