

CHAPTER

9

**Payment issues in
post-acute care**

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Chapter summary

Post-acute care (PAC) providers—skilled nursing facilities (SNFs), home health agencies (HHAs), inpatient rehabilitation facilities (IRFs), and long-term care hospitals (LTCHs)—offer Medicare beneficiaries a wide range of skilled nursing and rehabilitation services. In 2016, about 43 percent of Medicare fee-for-service (FFS) patients discharged from an acute care hospital were discharged to PAC, and, in 2017, the program spent about \$60 billion across the four PAC settings.

Although similar patients can be treated in different PAC settings, Medicare’s FFS payments can vary substantially because Medicare uses separate prospective payment systems (PPSs) to pay for care in each setting. Further, because each setting uses its own assessment tool to evaluate patients, it has been difficult to compare across settings the patients treated and the outcomes they achieved. The addition of uniform items to these different assessments has helped to improve comparison efforts. The regulatory requirements PAC providers must meet also differ. HHAs and SNFs have setting-specific requirements, while IRFs and LTCHs, which are licensed as hospitals, must meet hospital requirements in addition to other setting-specific requirements. The need to align the requirements is important, but some could raise a provider’s costs, so it would be important to ensure that providers face, by and large, the same set of requirements under a new payment system, the unified PAC PPS.

In this chapter

- Background
- Evaluating an episode-based payment system for post-acute care
- Evaluating patient functional assessment data reported by post-acute care providers
- Aligning regulatory requirements across PAC providers

As mandated by the Congress, in June 2016, the Commission evaluated a prototype design and concluded that a unified PAC PPS would establish accurate payments and increase the equity of payments across conditions. Because the variation in profitability by clinical condition would be narrower compared with current payment policy, providers would have less incentive to selectively admit certain types of patients over others. Since 2016, the Commission has continued to examine financial and administrative issues regarding a unified PAC PPS, including the level of aggregate PAC spending on which to base payments (to ensure that Medicare's payments are adequate but not overly generous), the need for a transition from existing payment systems to the new one, the monitoring required to keep payments aligned with the cost of care, and a way to increase the equity of PAC payments under existing systems before a PAC PPS is implemented.

In its work to date on a unified PPS, the Commission has evaluated a design that would establish payments for each PAC stay. This chapter discusses three issues related to a PAC PPS. The first pertains to a system that uses an episode of PAC as the unit of service. The Commission evaluated an episode-based design and compared it with one that was stay based—that is, one that would pay for each PAC stay. An episode would include only PAC and exclude prior hospital stays, intervening hospital stays during the episode, and Part B services (such as physician and ancillary services) furnished during the episode. An episode-based PPS would encourage providers to furnish an efficient mix of PAC and dampen FFS incentives to furnish unnecessary PAC services within the episode.

However, given the overpayments for short episodes and underpayments for long ones that would likely result, some providers could respond in unintended ways that could impair access to high-quality care for beneficiaries. Past behavior suggests that some providers would respond to the financial incentives by avoiding beneficiaries who would likely require extended PAC and by basing treatment decisions (such as whom to admit and when to discharge or transfer a patient) on financial considerations rather than what is best for the beneficiary. An outlier policy could be designed to narrow the differences in profitability across episodes but would be unlikely to correct the large overpayments and underpayments based on episode length.

Having evaluated the tradeoffs between the two designs, the Commission favors pursuing a stay-based design as the initial strategy to better protect beneficiaries against undesirable provider behavior. Certain policies would dampen incentives under the stay-based design to furnish unnecessary PAC stays, including a PAC value-based purchasing program and a strengthened accountable care program.

Once a new PPS is adopted and practice patterns under the existing settings converge, CMS could consider an episode-based design.

A second issue involves PAC providers' recording of functional assessment data, which are used to establish care plans for patients, risk adjust payments, and measure quality of care. For years, the Commission urged the collection of uniform patient assessment information and the standardization of quality measures so patients and the providers treating them could be compared across PAC settings. The Improving Medicare Post-Acute Care Transformation Act of 2014 requires the Secretary to collect uniform patient assessment information, develop common quality measures, and report this information. These efforts are well underway.

However, recent analyses have led the Commission to question the current state of the functional assessment data. Because this information affects payments for some PAC providers and the calculation of certain quality metrics, providers have an incentive to report the information in ways that raise payments and appear to improve performance. We cite numerous examples of changes PAC providers have made in response to payment incentives; if providers similarly respond to financial incentives in how they report patients' function, the assessment data become of questionable value for payment, quality measurement, and care planning. To evaluate the quality of the functional assessment information, we examined the consistency of its reporting by PAC providers. In our analysis, we found that the same beneficiary discharged from one PAC setting and directly admitted to another PAC setting received substantially different functional assessment scores; that is, the score received at discharge was markedly different from the one received at admission to the second setting. To conduct this analysis, we sorted patients into broad function groups based on four activities of daily living. Although the patient groups were associated with severity of illness and other patient characteristics, the assessments for these patients were not consistent between two PAC providers. Further, there were large disagreements between assessment items used for payment and those used for quality reporting. Differences revealed how achieving certain scores would raise providers' payments and would show larger than warranted improvement in quality performance. The large differences and apparent bias in the reporting suggest these data must be improved to reliably capture meaningful differences among patients.

Our analyses and past experience with PAC providers responding to payment incentives raise questions about whether this information should be relied on for establishing payments. Even if the data appeared consistent, we question whether Medicare should base payments on a factor of care that is firmly in a provider's control. Though other administrative data, such as diagnosis information included

in claims data, are also provider reported and may be vulnerable to misreporting, patient functional status is more subjective and may be more difficult to audit. Still, maintaining and improving function is a key outcome measure for PAC providers, so improving the reporting of assessment data is desirable. We discuss possible strategies to improve the reporting of assessment data, the importance of monitoring the reporting of these data, and alternative measures of function that do not rely on provider-completed assessments.

The third issue involves differences in current requirements by PAC setting, and we discuss approaches for aligning these requirements. Because a unified PAC PPS would establish a common payment system, Medicare's existing setting-specific regulations would need to be aligned so that PAC providers face the same set of requirements for treating similar patients. The Commission suggests a two-tiered regulatory approach. All PAC providers would be required to meet a common set of requirements that would establish the basic provider competencies to treat the average PAC patient. Providers opting to treat patients with specialized or very high care needs—such as those who require ventilator support or high-cost wound care—would be required to meet a second tier of requirements that would vary by the specialized care need. For example, a single set of requirements, such as those related to treating patients on ventilators, would apply to all providers opting to treat a given special condition or care need. A provider opting to treat multiple complex conditions or special care needs would be required to meet each set of condition-specific requirements. This approach would be akin to licensing by service line and would shift the regulations from setting specific to patient focused. Medicare would periodically need to update the conditions assigned to the second tier to reflect changes in medical practice. The chapter also explores the changes that would be required to align coverage requirements across the PAC settings. ■

Background

Post-acute care (PAC) providers—skilled nursing facilities (SNFs), home health agencies (HHAs), inpatient rehabilitation facilities (IRFs), and long-term care hospitals (LTCHs)—offer Medicare beneficiaries a wide range of services, including recuperation and rehabilitation services and hospital-level care. In 2016, about 43 percent of Medicare fee-for-service (FFS) patients discharged from an acute care hospital were discharged to PAC, and the program spent about \$60 billion across the four PAC sectors. Although PAC providers can treat similar patients, Medicare’s FFS payments can differ substantially because the program uses separate prospective payment systems (PPSs) to pay for stays in each setting. The Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT) requires the Commission to complete two reports on a unified payment system for PAC providers—one recommending features of a prospective payment system (PPS) and another detailing prototype features of a PAC PPS, due after the Secretary conducts his own analysis and makes recommendations to the Congress on a unified payment system.

In response, in June 2016, the Commission recommended features of a PAC PPS that used patient and stay characteristics to establish payments for PAC stays in the four PAC settings. Using readily available data, the Commission concluded that the design would establish accurate payments for most of the more than 40 patient groups it examined and would increase the equity of Medicare’s payments across providers. With smaller differences in profitability across conditions, providers would have less incentive to selectively admit certain types of patients over others.

Since its 2016 report, the Commission has continued to examine various issues regarding a PAC PPS, including the level of aggregate PAC spending to establish payments, the need for a transition to a fully implemented PPS, the monitoring required to keep payments aligned with the cost of care, and a way to increase the equity of PAC payments before a PAC PPS is implemented. Last year, the Commission’s work evaluating the accuracy of payments for a sequence of PAC stays led it to explore a PPS design that would establish payments for an episode of PAC.

The Commission also recommended that a value-based purchasing (VBP) policy for PAC be implemented to tie

payments to provider performance on measures of quality and resource use. A VBP policy would help counter the incentive to lower the quality of care furnished if doing so reduced a provider’s costs. Our recommended VBP design supports including a measure of resource use to dampen the FFS incentives to increase the volume of PAC stays.

Maintenance of or improvement in function is a goal for many beneficiaries receiving PAC. A patient’s functional status and changes in function are used to establish care plans for patients, risk adjust payments, and measure quality of care. Until recently, the patient assessment information collected in each setting differed, making it difficult to compare patients and outcomes. In addition to separate assessment tools, quality reporting requirements and measures differ by setting. For years, the Commission has urged the collection of uniform patient assessment information and the standardization of quality measures so patients and the providers treating them could be compared across PAC settings. IMPACT requires the Secretary to collect uniform patient assessment information, develop common quality measures, and report this information. These efforts are well underway.

Current regulatory requirements vary by setting. HHAs and SNFs must meet setting-specific requirements, while IRFs and LTCHs, being licensed as hospitals, must meet hospital requirements in addition to setting-specific rules. Because a unified PAC PPS would establish a common payment system, Medicare’s existing setting-specific regulations would need to be mostly aligned so that PAC providers face the same set of requirements and the associated costs of meeting them. Some differences would remain due to differences between institutional and noninstitutional care.

CMS has experimented with bundled payment for PAC, most recently with two demonstrations run by the Center for Medicare & Medicaid Innovation. Called the Bundled Payments for Care Improvement (BPCI) initiative and the Comprehensive Care for Joint Replacement (CCJR) model, these demonstrations make organizations responsible for total spending for and quality of an episode of care, thereby giving providers an incentive to reduce unnecessary care, coordinate with one another, and improve the quality of care beneficiaries receive (see text box on the BPCI initiative and the CCJR model, pp. 278–281). To meet the requirements of its own mandated report

Bundled Payments for Care Improvement initiative and the Comprehensive Care for Joint Replacement model

The Bundled Payments for Care Improvement (BPCI) initiative and the Comprehensive Care for Joint Replacement (CCJR) model use discrete events, such as a hospitalization for a knee replacement, to trigger episodes of care for which Medicare pays a bundled rate. Both are described below, along with summaries of the initial results regarding program spending, volume, and quality of care.

Overview of the BPCI initiative and the CCJR model

The BPCI initiative includes four models that began in 2013 and ended in 2018. The next generation of the initiative, the BPCI–Advanced (BPCI–A) initiative, began in 2018 and is scheduled to run through 2023. Because relatively few providers participated in Models 1 and 4, we focus on Models 2 and 3 and the BPCI–A initiative.

Episodes under Model 2 included the inpatient stay in an acute care hospital plus the post-acute care (PAC) and most other services covered under Medicare Part A and Part B up to 90 days after hospital discharge. Like all BPCI models, Model 2 was voluntary. Participants selected any of 48 clinical episode types to which Model 2 applied, including spinal fusions, acute myocardial infarctions, major joint replacements, and urinary tract infections. Under the demonstration, CMS paid fee-for-service (FFS) rates for each service furnished, and then, after each quarter, compared the total payments made for all services during the episode with a target price. The target price was based on each participating provider's historical episode spending, with a small discount (e.g., 2 percent). When a participating provider's episode payments fell below CMS's target price, the provider received the difference between the target price and Medicare's payments (up to a certain maximum). In contrast, if episode payments were higher than the target price, the participating provider was required to pay CMS the difference (up to a certain maximum).¹ For any given provider, the net reconciled amounts

could be positive (when a provider kept its spending below the target) or negative (when the provider's spending exceeded the target).

BPCI Model 3 shared many characteristics with Model 2 (e.g., voluntary participation, retrospective reconciliation, and 48 clinical conditions). The largest differences between the models involved defining the terms of the bundled payment—the start of the period covered by the payment and the services it included. Episodes in Model 3 excluded the triggering hospital stay and began when a beneficiary was admitted to a PAC provider. As a result, most Model 2 providers were acute care hospitals and most Model 3 providers were PAC providers.

After Models 2 and 3 ended in 2018, CMS introduced the BPCI–A initiative. The BPCI–A initiative closely resembles Model 2, with a few key changes such as:

- the BPCI–A initiative includes 32 clinical episode types instead of the 48 under Model 2;
- the BPCI–A initiative includes 3 outpatient episode types, whereas Model 2 contained only inpatient episodes;
- the BPCI–A providers' performance on quality measures affects payments, whereas Model 2 payments were not affected by quality measures;
- the BPCI–A initiative qualifies as an advanced alternative payment model (A–APM) for the purposes of the Quality Payment Program, whereas Model 2 did not; and
- other technical differences (e.g., target prices are provided prospectively to the BPCI–A initiative participants instead of at reconciliation and the BPCI–A initiative includes hospice spending).

Acute care hospitals and physician group practices can participate directly in the BPCI–A initiative; that is, they can enter into an agreement with CMS to participate in the model and bear risk. Other entities can participate as “convener participants.” A convener

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Bundled Payments for Care Improvement initiative and the Comprehensive Care for Joint Replacement model (cont.)

participant brings together multiple downstream entities, facilitates coordination among these entities, and bears and apportions financial risk under the model (a kind of subcapitation). Although PAC providers can participate as convener participants, as of January 2019, very few had chosen to do so. Instead, conveners tend to be health care systems, insurance companies (e.g., United Healthcare Services), and consulting firms specializing in managing bundled payments or PAC more broadly (e.g., naviHealth, Stryker Performance Solutions, Fusion5, and Remedy Partners) (Center for Medicare & Medicaid Innovation 2019).

The CCJR model is like the BPCI–A initiative in that the bundle includes the acute care hospitalization plus nearly all Part A and Part B spending 90 days postdischarge. However, in addition to technical differences, there are three substantial differences between the CCJR model and the BPCI–A initiative. First, the CCJR model is mandatory in 34 metropolitan statistical areas, and the BPCI–A initiative is voluntary. The CCJR model’s mandatory structure is critical to ensure CMS is able to assess its scalability and infer likely effects if the demonstration were expanded nationally. Second, the CCJR model applies to only one inpatient episode (lower extremity joint replacement), whereas the BPCI–A initiative includes 29 inpatient and 3 outpatient episode types. Third, under the CCJR model, only acute care hospitals can initiate an episode, and there is no “convener participant” role.

Preliminary CCJR model and BPCI initiative results

To date, evaluations from the first three years of BPCI Models 2 and 3 and the first two years of the CCJR model provide most of the insight regarding recent bundling programs that include PAC. For these models, we analyzed CMS-sponsored evaluations and peer-reviewed literature for three outcomes of interest—changes in Medicare spending (both per episode and net of reconciliation payments), volume changes, and quality outcomes. The robustness of the data on these outcomes varied across studies, and not all years covered by the

BPCI initiative or the CCJR model have been evaluated to date, so these results could change in the future.

Spending Over the first three years of BPCI Models 2 and 3, Medicare spending per episode declined, but after accounting for reconciliation payments made to participants, these models increased total Medicare spending. Medicare spending rose \$202 million under Model 2 and \$85 million under Model 3 (Dummit et al. 2018).²

For Model 2, reductions in Medicare payments totaled \$278 million (\$691 per episode) for hospital-initiated episodes and \$255 million (\$726 per episode) for those initiated by physician group practices (Dummit et al. 2018). These savings were offset by higher than expected reconciliation payments (\$736 million), resulting in a statistically significant net increase in Medicare spending of \$202 million (\$268 per episode) (Dummit et al. 2018). Net reconciliation payments to providers were higher than expected because CMS eliminated downside risk for part of the period covered by the current evaluations (meaning that providers whose actual spending exceeded their target price did not have to repay CMS). In the latter years of Models 2 and 3 and currently in the BPCI–A initiative, providers face two-sided risk, suggesting that these demonstrations could generate modest program savings in the future.

Reduced PAC spending was the primary driver of total savings per episode under Model 2. PAC savings were achieved by shifting beneficiaries away from institutional PAC settings (especially skilled nursing facilities (SNFs)), shortening SNF stays, and (for a few clinical episodes, such as knee and hip replacements and spinal fusions) reducing the share of beneficiaries discharged to any PAC setting. At the same time, the share of beneficiaries using home health increased, suggesting BPCI participants were able to shift some of their patients from SNFs to home health agencies (HHAs) (Dummit et al. 2018).

The effect of Model 3 (the PAC-initiated bundle) on Medicare spending was similar to the effect of

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Bundled Payments for Care Improvement initiative and the Comprehensive Care for Joint Replacement model (cont.)

Model 2. Model 3 generated savings across a variety of episodes, but the savings were outweighed by reconciliation payments, so that Medicare spending increased on net. Similar to Model 2, reductions in SNF spending drove the per episode savings, while HHA spending increased slightly.

The results from the first two years of the CCJR model were similar to those from the BPCI initiative, although the CCJR model appears to have generated small net program savings by the demonstration's second year. One study suggested that Medicare spending declined about 3 percent more per episode (\$812) relative to a control group for market areas included in the CCJR model (Barnett et al. 2019). After accounting for reconciliation payments to providers, Medicare spending fell \$212 per episode (0.7 percent) relative to the control group. Because the CCJR model qualifies as an A-APM, net savings could be further reduced to the extent that physicians qualified for a bonus under the Quality Payment

Program as a result of participating in the CCJR model. Similar to the BPCI initiative, researchers found that the CCJR model's savings were primarily driven by reductions in institutional PAC spending, particularly in SNFs and IRFs.

Volume Some researchers have expressed concern that while bundled payments give providers an incentive to reduce spending for the period and services covered by the bundle, providers could seek to generate additional bundles. Compared with traditional FFS, the incentive to generate additional volume could be stronger under the BPCI initiative and the CCJR model because providers are paid standard FFS rates plus any reconciliation amounts generated, making the services potentially more lucrative. Any such added volume could offset the modest program savings generated to date, potentially expose beneficiaries to any risk associated with unnecessary care, and increase beneficiary cost sharing.

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on a PAC PPS, the Department of Health and Human Services has convened an expert panel to gather input on design features of a PAC PPS.

Evaluating an episode-based payment system for post-acute care

The Commission evaluated a design for a PAC PPS that would establish payments for an episode of PAC. The episode would include only PAC and exclude prior hospital stays, intervening hospital stays during the episode, and all Part B services furnished during the episode. An episode-based PPS is intended to encourage providers to furnish an efficient mix of PAC and to dampen FFS incentives to furnish unnecessary PAC

services within the episode. The concern is that providers could respond by inappropriately shortening care, avoiding patients who are likely to require extended care, and transferring beneficiaries to other settings for financial rather than clinical reasons.

To begin this work, we updated a stay-based design using 2017 PAC stays. Then we aggregated sequential PAC stays into episodes and evaluated the accuracy and financial incentives of such a design and compared the advantages and drawbacks of an episode-based design (that includes back-to-back PAC stays) with a stay-based design. Given the potential risks to beneficiaries of an episode-based design, the Commission discussed possible near-term and longer term approaches and underscored the importance of concurrently implementing strategies that dampen the incentive for unnecessary volume.

Bundled Payments for Care Improvement initiative and the Comprehensive Care for Joint Replacement model (cont.)

However, to date, there is little evidence to suggest that the BPCI initiative or CCJR model has resulted in a higher volume of services. Of the 48 types of clinical episodes included in BPCI Models 2 and 3, many are nondiscretionary and unlikely susceptible to inducing volume. Therefore, research has focused on major joint replacements of the lower extremity (nonfracture) because providers have a greater ability to influence beneficiaries' decision to undergo these procedures relative to nonelective procedures. Despite their theoretical susceptibility to volume induction, CMS has found no evidence that markets with a large share of volume attributed to BPCI participants experienced differentially high volume growth (Dummit et al. 2018). Similarly, regarding induced volume, researchers examining the CCJR demonstration found no significant differential change in the per capita volume of hip or knee replacement episodes between the treatment areas and control areas after the CCJR model was implemented (Barnett et al. 2019).

Quality The BPCI initiative and the CCJR model did not appear to substantially affect the quality of care received by Medicare beneficiaries. Across multiple studies, the CCJR model was found not to significantly affect quality metrics—including rates of readmissions, complications (e.g., surgical infection rates), emergency department visits, and mortality—over the first two years of the program (Barnett et al. 2019, Dummit et al. 2018, Finkelstein et al. 2018). Similarly, for Model 2, there were few statistically significant changes in mortality, emergency department visits, readmissions, or functional status, but beneficiaries had slightly less favorable views of care experiences and less satisfaction. Model 3 had the least positive quality results, with the evidence suggesting limited but generally mixed results. For example, there was some evidence that beneficiaries had less improvement in functional status and reported less favorable care experiences (Dummit et al. 2018). ■

The advantages and drawbacks of an episode-based PAC PPS

Under an episode-based approach to PAC payment, a single payment would be established under a PAC PPS to pay for a course of PAC (care furnished in one or more PAC settings by one or more providers). Payment for the episode would be based on the average cost of the PAC furnished during the episode.

Paying for an episode of care would have several advantages. First, compared with a stay-based design, an episode-based design would dampen the incentives to generate unnecessary care. Rather than furnish more stays to generate revenue, providers would have an incentive to furnish an efficient mix of PAC that meets a beneficiary's care needs. Second, as regulatory requirements become aligned under a PAC PPS, institutional providers (SNFs, IRFs, and LTCHs) would have the flexibility to offer a

continuum of services to beneficiaries whose care needs evolve over time. Beneficiaries would be less likely to experience poorly coordinated care, especially if institutional PAC providers treated a broad mix of care needs.³ Last, paying a provider by PAC episode rather than by PAC stay would align the unit of service with how PAC providers offering a continuum of services would furnish care.

However, episode-based payments could result in providers furnishing fewer services than medically appropriate. Because a PPS is a system of averages, an episode-based design will likely overpay for short episodes and underpay for long ones. Providers would have a financial incentive to shorten episodes and furnish fewer services, even needed services, if such stinting on care were undetectable by quality metrics that gauge provider performance. Providers would also have an incentive to avoid patients whose need for extended care

The Commission's recommended design features of a stay-based post-acute care prospective payment system

In its June 2016 report to the Congress, the Commission recommended the following features of a post-acute care prospective payment system design:

- a uniform unit of service;
- a uniform method of risk adjustment that relies on administrative data on patient and stay characteristics;
- two payment models (one for routine and therapy services and another one for nontherapy ancillary services, such as drugs) to reflect differences in benefits across settings; sum of the two payments establish the total payment for the stay;
- adjustment of payments for home health stays to prevent considerable overpayment;
- a high-cost outlier policy to protect providers from incurring large losses and help ensure beneficiary access to care; and
- a short-stay outlier policy to prevent large overpayments for unusually short stays. ■

was not adequately reflected in the risk adjustment model. In addition, with more dollars at stake, episode-based payments could encourage providers to initiate more PAC episodes. Compared with a stay-based design, this risk would be lower since the decision to initiate PAC is not made by the PAC provider, whereas PAC providers, in consultation with a patient's physician, decide whether to extend PAC.

The incentives for PAC providers and the administrative infrastructure they would need to implement an episode-based payment system depends in part on how such a payment would be made when multiple providers were involved in the episode. (About one-third of PAC consists of sequential PAC stays (Medicare Payment Advisory Commission 2018b).) CMS could apportion a single payment across multiple providers based on the share of total episode costs incurred by each provider. Each provider would have limited control over the care it does not furnish, yet its final payment would be some portion of the total episode payment. Alternatively, CMS could pay a single entity for the care, perhaps the first PAC provider, and this provider would be at risk for all downstream PAC. Because many PAC providers are small and would not have the infrastructure to set or make payments to other providers, we have assumed for our analyses the first arrangement. Paying hospitals for the PAC episode is not a viable option since the majority of PAC is not preceded by a hospitalization.

Updated analysis of a stay-based PAC PPS using 2017 PAC stays

Our work comparing stay-based and episode-based designs updates our PAC PPS stay-based design using 2017 PAC stays to reflect more current practice patterns and case mix (see text box on estimating costs and payments, pp. 290–295).⁴ Like our previous work, the analyses include PAC admissions to the four settings, regardless of whether there was a preceding hospital stay. These assumptions are consistent with the original congressional request in IMPACT and with current Medicare coverage rules.

The effects we estimate reflect providers' responses to existing policies. When the anticipated changes to the SNF and HHA PPSs are implemented (October 2019 for the SNF PPS, January 2020 for the HHA PPS), the estimated effects of a PAC PPS will differ from those we modeled. Because the proposed designs for both PPSs rely on patient characteristics to establish payments, we expect their effects to be directionally consistent with those of a unified PAC PPS. Likewise, when a PAC PPS is implemented, we expect it to have smaller but directionally similar effects because the setting-specific PPSs would have already had some of the same effects. Our examination of the effects also does not consider the key role hospital discharge planners play in guiding beneficiaries' decisions about where to seek PAC.

Although a unified PPS is likely to change providers' financial incentives, these may or may not affect how placement decisions get made.

The model incorporates the design features recommended by the Commission (see text box on recommended design features). Most importantly, payments for stays are adjusted to reflect the patient's and stay's characteristics but do not adjust payments for service use. The level of payments for home health care stays are adjusted to account for this setting's considerably lower costs compared with institutional PAC. All adjusters are based on readily available administrative data.

The more recent 2017 data reflect several trends in PAC: a shift toward the use of home health care and away from SNF care, a narrowing of differences between hospital-based and freestanding SNFs in therapy practices, changes in the type of cases treated in IRFs as they adapt to new compliance requirements, and the implementation of the dual payment-rate structure in LTCHs.⁵ We compared the results using 2017 PAC stays with our previously reported results for 2013 stays, examining the overall accuracy of the model, the alignment of payments and costs, and the level of payments compared with the cost of care (Medicare Payment Advisory Commission 2017a, Medicare Payment Advisory Commission 2016a).

Consistent with previous results, we found that the level of current payments for PAC stays is high compared with the cost to treat beneficiaries (11 percent higher); the average PAC PPS payment-to-cost ratio (PCR) is 1.11. A stay-based design would establish accurate payments for most of the more than 40 patient groups we examined and would increase the equity of payments across conditions (Table 9-1, pp. 284–285).⁶ The increased equity of payments under a PAC PPS is seen in the narrower range of PCRs compared with the PCRs under current policy. Across the clinical groupings, the PCRs under the current policy range from 0.99 (for severe wound stays) to 1.20 (for other neurology medical stays, such as patients with Parkinson's disease). In contrast, under a PAC PPS, the ratios range from 1.05 (hematology medical) to 1.16 (patients on ventilators). With a narrower range in the profitability of treating different conditions, providers would be less likely to selectively admit some beneficiaries and avoid others. Notably, a PAC PPS would redistribute payments from stays that included high amounts of therapy not predicted by the patients' clinical characteristics (such as the least frail beneficiaries, who receive unusually high amounts of amounts of therapy) to

patients with high care needs (such as patients who have the highest level of severity or who have severe wounds).

We expected that the average predicted costs for stays with low and high shares of therapy costs would be considerably different from these stays' average actual costs. For patients who receive high amounts of therapy services unrelated to their care needs, we expected and found that our model would predict costs that, on average, are lower than actual costs (since the amount of therapy received may have little relationship to the patients' diagnoses and comorbidities). Conversely, for patients who receive low amounts of therapy (such as medical patients with multiple comorbidities), we expected and found that our model predicted costs that are higher than actual costs. Over time, under a PAC PPS, we would expect these ratios to move toward 1.0 as providers changed their therapy practices (and costs) to match patients' care needs.

There were generally two reasons for results that differed from those previously reported. First, some definitions of risk adjusters and reporting groups were refined to more closely describe the characteristics of patients in the group. For example, we narrowed our definition of patients on ventilators to include only those receiving invasive ventilator care (in which the beneficiary has had a tracheostomy). Since 2013, the use of noninvasive ventilator care (in which the patient wears a mask or a shell for ventilator support) increased substantially (Office of Inspector General 2018). We wanted the ventilator group to focus on patients with specialized care needs. As a result, this group of patients now is almost exclusively treated in LTCHs, and the PAC PPS payments are no longer lowered by the averaging with lower cost settings. Second, between 2013 and 2017, the mixes of settings where the patients were treated shifted. For example, payments for respiratory medical stays increased an estimated 1 percent (compared with a previous estimate of 5 percent) because more of these stays were treated in HHAs, which lowered their predicted cost and hence the PAC PPS payments.

Consistent with prior results, payments under a PAC PPS would be redistributed across settings. These results are to be expected when moving from setting-specific PPSs to a unified one, and they do not warrant correction. Payments to HHAs would decrease compared with current payments because the current HHA PPS payments are very high relative to the cost of care. Yet even with the estimated 5 percent reduction, PAC PPS payments would remain 12 percent higher than the costs of home health

**TABLE
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Compared with current policy, payments under the stay-based option for a proposed PAC PPS would be more accurate and equitable for most patient groups (2017 PAC stays) (continued next page)

Reporting group	Share of stays	Payment-to-cost ratio		Percent change in payments between PAC PPS and current payments
		Under existing policy	Under PAC PPS	
All	100%	1.11	1.11	0%
Clinical group				
Cardiovascular medical	15	1.11	1.11	0
Orthopedic medical	13	1.19	1.12	-6
Other neurology medical	10	1.20	1.12	-6
Serious mental illness	9	1.13	1.12	0
Respiratory medical	9	1.09	1.10	1
Orthopedic surgical	8	1.11	1.12	0
Severe wound	5	0.99	1.12	13
Skin medical	3	1.08	1.12	4
Cardiovascular surgical	3	1.07	1.10	3
Infection medical	4	1.09	1.10	1
Stroke	2	1.09	1.10	1
Hematology medical	1	1.12	1.05	-7
Ventilator	0	1.16	1.16	0
Frailty				
Least frail	24	1.19	1.12	-6
Most frail	22	1.08	1.11	2
Cognitively impaired	19	1.14	1.12	-3
Medically complex				
Multiple body system diagnoses	9	1.06	1.11	4
Severely ill	5	1.06	1.11	4

Note: PAC (post-acute care), PPS (prospective payment system), HHA (home health agency), I-PAC (institutional post-acute care), ESRD (end-stage renal disease), SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), LTCH (long-term care hospital). Analysis includes stays that were part of episodes of PAC that began between January 1, 2017, and June 30, 2017. The table shows the ratios of average payments in 2017 to average costs in 2017 for all the PAC stays included in the group and the ratios of estimated payments under a PAC PPS to average costs in 2017 for all the PAC stays in each group. A payment-to-cost ratio of 1.0 indicates that payments equal the actual costs. "Stays meeting the LTCH criteria" refers to Medicare discharges that meet the criteria specified in the Pathway for SGR Reform Act of 2013 for the standard LTCH PPS rate. Patients' level of frailty was determined using the JEN Frailty Index. "Multiple body system diagnoses" includes patients with diagnoses involving five or more body systems. "Severely ill" stays include patients who were categorized as severity of illness Level 4 and received I-PAC. "Chronically critically ill" stays include patients who spent eight or more days in an intensive care or coronary care unit during the preceding hospital stay or were on a ventilator in the PAC setting. Analysis includes 4.7 million PAC stays in 2017. The percent of stays do not sum to 100 because small groups are not shown. The "percent change" column was calculated using unrounded data.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

stays. Payments would decline for LTCHs and IRFs largely because PAC PPS payments would be based on the average cost of stays across the PAC settings, and many of the types of cases treated in IRFs and LTCHs are also treated in lower cost settings. Because the payments for cases treated in LTCHs that do not meet the LTCH criteria were already significantly reduced in 2017 (they are paid

under the inpatient hospital PPS), payments under a PAC PPS affect them less than cases qualifying for LTCH payments.

Episode-based PAC PPS payments

To test the feasibility of an episode-based design, we analyzed episodes of a typical length, spanning a single

**TABLE
9-1**

Compared with current policy, payments under the stay-based option for a proposed PAC PPS would be more accurate and equitable for most patient groups (2017 PAC stays) (continued)

Reporting group	Share of stays	Payment-to-cost ratio		Percent change in payments between PAC PPS and current payments
		Under existing policy	Under PAC PPS	
Chronically critically ill	4	1.09	1.10	1
Other stay and patient characteristics				
Low/no therapy share of costs				
HHA stays	29	1.22	1.59	30
I-PAC stays	7	0.93	1.05	13
High therapy share of costs				
HHA stays	18	1.36	1.01	-26
I-PAC stays	7	1.20	1.11	-8
Community admitted	55	1.17	1.11	-5
Stays with prior hospital stay	45	1.09	1.11	2
Disabled	26	1.10	1.11	1
Dual eligible	30	1.14	1.11	-2
ESRD	4	1.07	1.10	2
Very old (85+ years old)	30	1.13	1.11	-1
Setting and provider characteristics				
HHA	74	1.18	1.12	-5
SNF	21	1.09	1.18	9
IRF	4	1.11	0.94	-15
LTCH: All stays	1	0.97	0.91	-7
LTCH: Stays meeting LTCH criteria	1	1.07	0.98	-8
Hospital based				
Freestanding	9	0.87	0.91	5
Freestanding				
Nonprofit	91	-1	1.14	-1
Nonprofit				
For profit	21	8	1.05	8
For profit				
	76	-2	1.14	-2

Note: PAC (post-acute care), PPS (prospective payment system), HHA (home health agency), I-PAC (institutional post-acute care), ESRD (end-stage renal disease), SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), LTCH (long-term care hospital). Analysis includes stays that were part of episodes of PAC that began between January 1, 2017, and June 30, 2017. The table shows the ratios of average payments in 2017 to average costs in 2017 for all the PAC stays included in the group and the ratios of estimated payments under a PAC PPS to average costs in 2017 for all the PAC stays in each group. A payment-to-cost ratio of 1.0 indicates that payments equal the actual costs. "Stays meeting the LTCH criteria" refers to Medicare discharges that meet the criteria specified in the Pathway for SGR Reform Act of 2013 for the standard LTCH PPS rate. Patients' level of frailty was determined using the JEN Frailty Index. "Multiple body system diagnoses" includes patients with diagnoses involving five or more body systems. "Severely ill" stays include patients who were categorized as severity of illness Level 4 and received I-PAC. "Chronically critically ill" stays include patients who spent eight or more days in an intensive care or coronary care unit during the preceding hospital stay or were on a ventilator in the PAC setting. Analysis includes 4.7 million PAC stays in 2017. The percent of stays do not sum to 100 because small groups are not shown. The "percent change" column was calculated using unrounded data.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

stay or consecutive pair of PAC stays. We found that an episode-based design would establish accurate payments for almost all the patient groups we examined. However, across these episodes, there were large differences in how long the episodes lasted, and their profitability varied considerably by episode duration. We found

that the average PAC PPS payments for relatively short episodes would be more than twice their average cost; conversely, PAC PPS payments would not cover the cost of relatively long episodes. Given that PAC providers have been highly responsive to changes in payment policy, it is likely that differences in profitability would result in

**TABLE
9-2**

The 10 most frequent episodes comprise single and pairs of PAC stays, 2017

Sequence of PAC	Count	Percent
H	1,025,589	44%
HH	482,006	21
S	362,346	15
SH	213,897	9
HS	63,675	3
IH	58,768	3
I	41,589	2
SS	28,718	1
IS	18,677	1
L	15,143	1
Other	39,110	2

Note: PAC (post-acute care), H (home health stay), S (skilled nursing facility stay), I (inpatient rehabilitation facility stay), L (long-term care hospital stay). Sequences include a single standard stay or pair and exclude unusually short stays. A sequence shows the order and setting of the stays in the episode. For example, "SH" refers to an episode that starts with a skilled nursing facility stay followed by a home health stay. Pairs of stays include episodes with only two standard (and no unusually short) stays and the first two standard stays of episodes that included at least three standard stays (and no unusually short stays). Analysis includes 2.3 million PAC episodes that began between January 1, 2017, and June 30, 2017. The percent column does not sum to 100 due to the other stay combinations.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

providers shortening how long they treat beneficiaries, avoiding beneficiaries who are likely to require extended periods of service, and transferring beneficiaries based on financial considerations rather than what would be best for beneficiaries. Depending on how a single payment would be prorated when multiple providers treated a beneficiary, a provider could make transfer decisions based on financial rather than medical considerations. An outlier pool could narrow, but would be unlikely to correct, the overpayments and underpayments.

Approach to test an episode-based PAC PPS

The majority of beneficiaries who use PAC receive care once in one setting, such as a sole home health or SNF stay. However, about one-third of PAC is furnished to beneficiaries who receive multiple PAC services, in one or more settings. Building on our experience analyzing sequential PAC stays, we created episodes by aggregating individual PAC stays that occurred within seven days of each other. This rule is a rough proxy for clinical relatedness while allowing some flexibility in how quickly home health care can be arranged (transfers between institutional PAC settings typically occur with no days in between the stays). We used beneficiary identifiers and dates to link sequences of PAC stays together.⁷ An

episode began with a PAC stay that was not preceded by other PAC use within seven days. A prior hospital stay was not required to begin a PAC episode because Medicare coverage for stays in HHAs, IRFs, and LTCHs does not require a prior hospitalization.

Given the numerous stay combinations, we assessed the feasibility of an episode-based payment by analyzing episodes comprising single "standard" PAC stays and pairs of standard PAC stays, which combined made up 69 percent of all PAC stays. (*Pair of stays* refers to a sequence of stays in which the patient is discharged from one PAC provider and is admitted directly to another PAC provider.) Standard stays exclude unusually short stays that would be paid under a short-stay policy. If a sequence of PAC stays included at least three standard stays and no unusually short stays, we included the first two in our analysis and omitted the remaining stays. The final sample included 2.3 million episodes constructed from 3.3 million stays.

Compared with longer episodes that include many stays, episode-based PAC PPS payments for episodes that include only single PAC stays and pairs of PAC stays are likely to be more accurate because there are smaller differences in the predicted costs across the episodes due to the narrower variation in how long the episodes last.

We show results for different single and pair combinations (such as a single home health stay vs. a pair) and for relatively short, medium, and long episodes.

Of the episodes included in the analysis (singles and pairs), single PAC stays made up 62 percent and pairs of stays made up 38 percent (Table 9-2). Pair episodes included lateral stays in the same setting (most frequently, back-to-back home health stays) and stays in different settings (most frequently, a SNF stay followed by a home health stay). Of the pairs, the majority (57 percent) were lateral stays, 34 percent were transfers to a less intensive setting, and 9 percent were transfers to a more intensive setting.⁸

To examine the effects of a PAC PPS by episode duration, we assigned episodes to three groups based on length of stay (for institutional PAC) and number of visits (for home health care). Relatively short episodes were those in the bottom third of each distribution; relatively long episodes were those in the top third of the distributions. Mixed episodes, which included both home health care and institutional PAC, were assigned to three groups based on their rank in both institutional PAC length of stay and number of home health visits among those with mixed episodes. Short home health episodes averaged 8 visits compared with 45 visits for long home health episodes. Short institutional PAC episodes averaged 13 days, while long institutional PAC episodes lasted 65 days.

Each episode's costs and payments were estimated as described in the text box on methodology (pp. 290–295). When analyzing the results by the type of episode (e.g., a relatively long episode), we considered care furnished by any institutional PAC provider as a single institutional PAC provider to reflect how a PAC PPS would pay for this care. The PAC PPS would ignore differences among institutional settings in establishing payments for these providers and separately adjust payments for home health stays to align payments to the considerably lower costs of this setting.

Results of an episode-based PAC PPS

Like a stay-based PAC PPS, an episode-based PAC PPS would establish accurate payments for most of the almost 40 patient groups we examined and would increase the equity of payments across conditions (Table 9-3, p. 288).⁹ Episode-based payments would be more closely aligned with their average cost compared with current policy. Across the clinical groupings shown, PCRs would range from 1.11 to 1.16 for an episode-based PAC PPS compared with 1.01 to 1.20 under current policy.

Because the range in profitability would be narrower compared with current policy, providers would be less likely to preferentially admit patients with certain clinical conditions and avoid others.

Because we set aggregate PAC PPS payments to be budget neutral relative to current payments, payments under an episode-based approach would be well above the cost of care (12 percent higher).¹⁰ Lowering the level of total spending (that is, not making an episode-based PAC PPS budget neutral) would be consistent with recommendations made by the Commission over many years to lower PAC payments. Like a stay-based PPS, an episode-based approach would redistribute payments from episodes that include high amounts of therapy not predicted by the patients' clinical characteristics to episodes for patients with high care needs. For example, payments would decrease 7 percent for orthopedic medical cases and would increase 12 percent for patients who had severe wounds.

An episode-based PAC PPS (even for these single and pairs of stays) would have very different effects, depending on the duration of the episode (Table 9-4, p. 289). Relatively short episodes would be highly profitable, and relatively long episodes would be unprofitable, especially for episodes that included only home health care or only institutional PAC. Payments for short episodes would be more than double their cost (the PCRs were 2.48 for short home health episodes and 2.07 for short institutional PAC episodes). Conversely, payments would be about three-quarters of the cost of long home health or institutional PAC episodes (the PCRs were 0.72 and 0.76, respectively). Because mixed episodes (those with home health care and institutional PAC) involve averaging the higher cost of institutional PAC and the lower cost of home health care, payments for them are more aligned to their costs. We do not see similar overpayment or underpayment by clinical condition or patient characteristic, factors included in the risk adjustment. These groups include a mix of short and long episodes, and the differences in profitability average out across the episodes within the groups.

The large differences in profitability could influence provider behavior. To the extent that providers could anticipate the duration of a PAC episode, an episode-based approach could encourage providers to selectively admit beneficiaries likely to have short episodes and avoid those likely to require long episodes. Similarly, since providers could control how long an episode lasted and the care they furnished within the episode parameters, the approach

**TABLE
9-3**

Compared with current policy, under the episode-based option for a proposed PAC PPS, payments would be more accurate and equitable for most patient groups (2017 PAC stays)

Reporting group	Payment-to-cost ratio		Percent change in payment	Share of episodes
	Under existing policy	Under PAC PPS		
All	1.12	1.12	0%	100%
Clinical group				
Orthopedic medical	1.20	1.11	-7	14
Cardiovascular medical	1.12	1.11	0	13
Orthopedic surgical	1.12	1.12	-1	12
Other neurology medical	1.20	1.12	-7	9
Respiratory medical	1.10	1.12	2	9
Serious mental illness	1.14	1.15	1	9
Infection medical	1.10	1.12	2	4
Severe wound	1.01	1.13	12	4
Skin medical	1.09	1.13	4	3
Cardiovascular surgical	1.08	1.13	5	3
Stroke	1.09	1.13	4	2
Hematology medical	1.12	1.11	0	1
Ventilator	1.17	1.16	-1	<1
Frailty				
Least frail	1.23	1.13	-8	21
Most frail	1.09	1.13	3	28
Cognitively impaired	1.15	1.12	-3	21
Medically complex				
Severely ill	1.08	1.13	5	6
Multiple body system diagnoses	1.08	1.14	6	11
Chronically critically ill	1.10	1.12	2	5
Other patient characteristics				
Disabled	1.11	1.13	1	24
Dual eligible	1.15	1.11	-4	29
ESRD	1.08	1.12	3	4
Very old	1.14	1.11	-2	31

Note: PAC (post-acute care), PPS (prospective payment system), ESRD (end-stage renal disease). A payment-to-cost ratio of 1.0 indicates that the average predicted cost is equal to the average actual costs and that the model would establish accurate relative weights for a payment system. Patients' level of frailty was determined using the JEN Frailty Index. "Multiple body system diagnoses" includes patients with diagnoses involving five or more body systems who were treated in institutional PAC settings. "Chronically critically ill" stays include patients who spent eight or more days in an intensive care or coronary care unit during the preceding hospital stay or were on a ventilator in the PAC setting. "Severely ill" stays include patients who were categorized as severity of illness Level 4 based on their first I-PAC stay. Analysis includes 2.3 million PAC episodes that began between January 1, 2017, and June 30, 2017.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

could result in premature discharges or stinting on care for beneficiaries whose care needs were extensive. That said, the results for the patient groups indicate that, on average, payments would be more than adequate. Like any PPS, payments for any given patient would differ from the

average but across all the patients would, on average, be adequate. However, the averaging required to balance out the underpayments and overpayments for long and short episodes would be far riskier for small providers.

**TABLE
9-4**

The episode-based option for a proposed PAC PPS would result in large underpayments and overpayments, depending on the episode length (2017 PAC stays)

Reporting group	Payment-to-cost ratio		Percent change in payment	Share of episodes
	Under existing policy	Under PAC PPS		
All	1.12	1.12	0%	100%
Episode type				
All home health episodes	1.21	1.12	-8	64
Short	1.80	2.48	38	22
Medium	1.30	1.28	-1	22
Long	1.03	0.72	-30	21
All I-PAC episodes	1.09	1.12	3	21
Short	1.01	2.07	106	7
Medium	1.05	1.32	26	7
Long	1.14	0.76	-33	7
All mixed episodes	1.09	1.12	3	15
Short	1.11	1.50	36	5
Medium	1.09	1.13	4	5
Long	1.09	0.92	-16	5
Provider characteristic				
All hospital based	0.87	1.02	17	9
Mixed (hospital based and freestanding)	0.97	0.93	-4	4
All freestanding	1.16	1.15	-1	88
All nonprofit	0.99	1.14	14	21
All for profit	1.18	1.14	-3	70
All government	1.00	1.08	9	2
Mixed ownership	1.05	1.03	-2	6

Note: PAC (post-acute care), PPS (prospective payment system), I-PAC (institutional PAC). A payment-to-cost ratio of 1.0 indicates that the average predicted cost is equal to the average actual costs and that the model would establish accurate relative weights for a payment system. Episodes were divided into "short," "medium," and "long" based on the duration of the episode. For home health-only episodes, these categories refer to the episodes in the bottom, middle, and top third of number of visits. For I-PAC-only episodes, the categories are based on the rank of days spanned by the episode. For mixed episodes, the categories are based on the combined ranks of the number of visits and days of the episode. Mixed episodes include a home health stay and an I-PAC stay. Analysis includes 2017 PAC episodes that began between January 1, 2017, and June 30, 2017. Components may not sum to totals due to rounding.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

Consistent with a stay-based PPS design, an episode-based PAC PPS would redistribute payments across providers based on the mix of episodes they treated. Compared with current policy, payments would increase for hospital-based providers and nonprofit providers and decrease for freestanding providers and for-profit providers.

Episodes that are longer than those we examined (such as those comprising three or more sequential home health stays) are more likely to result in larger differences in

profitability across episodes. The averaging involved in setting a single payment for episodes that span even larger differences in length (and their associated costs) is likely to result in even larger overpayments for short episodes and underpayments for long ones.

A single outlier pool would target payments to the highest cost episodes

The provision of a single outlier pool would be one way to dampen the effects of an episode-based PAC PPS on

Methodology to estimate the costs and payments of post-acute care stays and episodes

To create episodes of post-acute care (PAC), we began with 8.3 million PAC stays in 2017. Of these, we combined 257,000 observations with a prior stay because they appeared to be either partial skilled nursing facility (SNF) or home health stays. We excluded beneficiaries who had managed care coverage, had missing data, or lived in Puerto Rico. We also excluded beneficiaries with overlapping start and end dates for institutional PAC stays, with institutional stays whose end dates overlapped with home health episodes, or with duplicate start dates for stays or episodes. Home health stays with end dates that overlapped with institutional PAC stay dates remained in the analysis because a beneficiary could end a home health care episode and enter into an institutional PAC setting before the end of the 60-day home health episode. A beneficiary's separate SNF claims were aggregated to create a stay. We included stays that were part of episodes that were initiated between January 1, 2017, and June 30, 2017, to ensure that most episodes were completed in 2017. The resulting sample was 4.7 million stays.

Creating episodes

Building on our experience analyzing sequential PAC stays, we created episodes by aggregating individual PAC stays that occurred within seven days of each other (Medicare Payment Advisory Commission 2018b). This rule was a rough proxy for the clinical relatedness while allowing some flexibility in how quickly home health care can be arranged (in contrast, stays that included transfers between institutional PAC settings typically occur with no days in between the stays). Episodes could include any combination of home health or institutional PAC. We used beneficiary identifiers and admission and discharge dates to link sequences of PAC stays together. An episode began with a PAC stay that was not preceded by other PAC use within seven days; a prior hospital stay was not required to begin a PAC episode. Episodes varied from a single PAC stay to more than six consecutive stays.

The stays in the episode analysis included single PAC stays and pairs of PAC stays, which made up 69 percent of the 4.7 million PAC stays in our sample. In addition, the following cases were excluded from the episode analyses:

- episodes in which one of the first two stays was unusually short, such as home health stays that qualified for a low utilization payment adjustment;¹¹
- later stays in an episode of care. Our analysis used episodes constructed from the first pair of stays.

The sample resulting from these exclusions totaled 3.3 million stays and 2.3 million episodes. We separately examined pairs of stays that are part of a longer episode and episodes consisting of only a pair of stays (terminal pairs). We found few differences in the results and did not report the groups separately.

Billing rules in place in 2017 govern what constitutes a stay, and our analysis did not alter stay definitions. Given the separate PPSs for each of the four settings, differences exist among settings in how intervening events, such as hospitalizations, define stays. In SNFs, for example, stays interrupted by a hospitalization are considered separate stays, while home health episodes continue after an intervening hospitalization. An interrupted stay in inpatient rehabilitation facilities (IRFs) and long-term care hospitals (LTCHs) can trigger a separate stay, depending on the length of the interruption and the intervening event.¹² In the future, when a common set of requirements is developed for PAC providers' participation, billing rules and the treatment of interrupted stays could be defined uniformly.

Estimating the cost of stays and episodes

To estimate the costs of each stay, we used information from 2017 claims and 2017 Medicare cost reports. For each institutional PAC claim, therapy and nontherapy costs were estimated by converting charges to costs using department-specific charge-to-cost ratios

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Methodology to estimate the costs and payments of post-acute care stays and episodes (cont.)

calculated from the provider's cost reports. Routine costs for institutional PAC stays were estimated by calculating the average routine cost per day from the provider's cost report and multiplying that amount by the length of the stay. The costs of routine home health visits are reported in the cost reports filed by home health agencies (HHAs). To arrive at the average cost of stays, we averaged the costs to treat stays across the four settings, weighted by the volume of stays treated in each setting. To estimate the cost of an episode, we summed the costs of stays included in the episode.

Estimating payments

Payments under each setting's current PPS ("actual payments") were gathered from PAC claims. To estimate payments under a PAC PPS, the design relies on models that predict the cost of each stay using patient and stay characteristics. Characteristics marked with an asterisk in the following list were taken from the hospital claim when there was a preceding hospital stay and proxied from PAC claims for stays without a preceding hospitalization. The risk adjustment would be improved with the inclusion of comorbidities from a longer period of time before the PAC stays. However, this adjustment would require CMS to use a much larger set of information to establish the payment for each stay. The risk score reflects the diagnoses gathered from inpatient, outpatient, and physician claims during the prior year (2016).

The following patient and stay information was used to predict the cost of each stay. The factors are intended to evaluate whether a PAC PPS design is feasible, not to specify the exact risk adjustment the design should include:

- patient age and disability status;
- primary reason to treat (Medicare severity–diagnosis related groups (MS–DRGs), aggregated into the broad "reason to treat" groups)*;
- patient comorbidities (using both the hospital and PAC stay claims);

- days spent in the intensive and coronary care units during the prior hospital stay;
- the patient's severity of illness using the all-patient refined–diagnosis related groups (APR–DRGs)*;
- the number of body systems involved in the patient's comorbidities (using both hospital and PAC claims);
- patient's risk score;
- a JEN Frailty Index (using both hospital and PAC claims);
- patient's cognitive status (using both hospital and PAC claims); and
- other aspects of care (bowel incontinence, severe wounds or pressure ulcers, use of certain high-cost service items, and difficulty swallowing) (PAC claim).¹³

We used these factors to attempt to capture different dimensions of a patient that could influence the cost of care without creating adverse or unintended consequences for beneficiaries. The Secretary could consider these or other measures in the risk adjustment included in the final design. For example, we included measures of frailty (using the JEN Frailty Index), but a similar constellation of comorbidities aimed at capturing a beneficiary's impairments could be used. All risk adjusters were based on administrative data (claims, Medicare Advantage risk scores, and beneficiary enrollment information) and did not use patient assessment information.

In the analysis updating the stay-based design, a home health indicator was included in all models to account for this setting's considerably lower costs compared with institutional PAC. Without this adjustment, home health providers would be substantially overpaid and the institutional PAC providers would be substantially underpaid compared with the cost of care. In the stay analysis, the adjuster is applied to each stay. In the episode analysis, we included two adjusters: one

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Methodology to estimate the costs and payments of post-acute care stays and episodes (cont.)

indicating whether an episode comprised only home health stays (either a single stay or pair of stays) and a second indicating whether the episode was a mix of home health and institutional PAC. These adjusters ensure that the level of payments would be aligned with the cost of care but do not directly adjust for whether the episode was a single stay or pair of stays.

In the stay-based analysis, we used Poisson regression models and developed one model to predict the costs of routine and therapy care for stays in the four PAC settings and a separate model to predict nontherapy ancillary (NTA) costs for stays in SNFs, IRFs, and LTCHs. We developed a separate model for NTA services because the home health care benefit does not cover these services. In the episode-based design, we estimated a model of routine and therapy costs per episode using the episodes constructed from the initial pair of stays and home health episodes. The model for NTA services was based on constructed episodes in which at least one of the initial stays was in an institutional setting.

All payments under a PAC PPS were adjusted for budget neutrality so that total payments across the four settings were the same as under the current payment systems. In the episode-based design, budget neutrality was based on the episodes that include single and pairs of stays. However, the design does not adjust for cost differences across institutional settings.

The design includes an illustrative high-cost outlier policy for unusually high-cost stays and episodes. In principle, high-cost outlier policies protect providers from incurring exceptionally large losses from treating unusually high-cost patients and help ensure beneficiary access to services. In the stay analysis, we established separate outlier pools for stays treated in HHAs and those treated in institutional PAC settings. The episode analysis includes a third pool for episodes that include an HHA and an institutional PAC stay. Each pool was set at 5 percent of spending and paid for 80 percent of the difference between the estimate's cost of the episode and the outlier threshold. We compared

these results with a single 5 percent outlier pool for all episode types.

The analysis updating the stay-based design also includes a short-stay outlier policy. Such policies prevent large overpayments for unusually short stays and protect beneficiaries from early transfers that could be motivated by financial rather than clinical considerations. We calculated the average cost per day for short stays across all institutional PAC stays and paid short stays this average daily rate for the number of days in the stay. Similarly, we calculated an average per visit cost for short home health stays and paid this average per visit rate for each visit in the stay. To acknowledge the higher costs typically incurred on the first day of the stay, we added 20 percent to the per day and per visit payment for the first day or visit. Because our work on episodes excludes very short stays, we did not include a short-stay outlier policy in the episode-based design.

Evaluating provider incentives under episode-based payment

We examined provider incentives by considering how payments and costs would vary if the same average patient were treated in different settings for different lengths of time, that is, for “short,” “medium,” and “long” stays. To calculate these variations, we estimated what costs and payments would be for different types of episodes while holding patient characteristics fixed (at the overall PAC average). We generated these estimates in three steps.

First, we used a regression model to estimate risk-adjusted differences in costs across nine types of episodes distinguished by setting (home health only, institutional only, and mixed) and length (short, medium, long). With episode cost as the dependent variable, we estimated a linear regression using indicators of episode type and patient characteristics as controls. The patient characteristics were the same as those used in the episode-level payment model, except that we excluded a small number of measures that are

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Methodology to estimate the costs and payments of post-acute care stays and episodes (cont.)

observed only for home health or only for institutional providers.

Second, from the estimated cost regression, coefficients of the indicators of episode type were used to calculate the average (predicted) episode cost for all nine episode types for an average PAC episode.

Finally, we computed what payments would be under the episode-based payment model. Under the episode-based payment design, the average home health-only episode has a payment equal to the average costs of those episodes multiplied by a factor used to maintain budget neutrality—likewise for institutional-only episodes and mixed episodes. Accordingly, we estimated what the implied episode-based payment would be for each setting type for the average patient by computing the (weighted) average cost over the three length categories for the three setting types. With costs and episode-based payments computed for an average patient for all nine episode types, we were able to examine differences in payment-to-cost ratios and profit levels across episode types for the same type of patient.

Evaluating the design of the PAC PPS

To evaluate the accuracy of a PAC PPS and estimate its impact on payments, we examined the accuracy of the models in aggregate (across all stays) and their effects on many patient groups. Stays from the four settings were assigned to one or more groups based on the stays' characteristics. (We created these groups to report the results of the PPS design, but the underlying prediction models remained the same across all groups.) We grouped patients by clinical condition, medical complexity, impairment, and other characteristics. Details of each group are listed below.

Clinical condition

Almost all of the clinical conditions we examined were based on information (diagnosis and procedure codes) from claims for the preceding hospital stay and, where there was no prior acute hospital stay within 30 days, from claims for the PAC stay. Two clinical conditions, ventilator care and severe wound care, were based

on information from the PAC claim. For stays or episodes without a prior hospital stay, the MS-DRG assignment was proxied using information from the PAC claim. With one exception, the clinical condition groups were mutually exclusive and hierarchical. The serious mental illness group and the other clinical groups are not mutually exclusive; an episode could be assigned to another clinical group *and* to the serious mental illness group. If relevant, stays or episodes were first assigned to ventilator care, then to severe wound care; all others were assigned to a major diagnosis category (MDC) based on the MS-DRG. A patient with a severe mental illness was assigned to this clinical group and to a ventilator, wound care, or MDC group. Except for ventilator care and patients with severe wounds, the clinical groups were based on the first stay of an episode. Ventilator care or wound care was flagged if it was present at any point during the PAC episode. Consistent with past work, we examined 14 broad clinical groups:

- Stroke
- Other neurology medical (medical stays assigned to MDC 1, excluding stroke)
- Orthopedic medical (medical stays assigned to MDC 8)
- Orthopedic surgical (surgical stays assigned to MDC 8)
- Respiratory medical (medical stays assigned to MDC 4)
- Cardiovascular medical (medical stays assigned to MDC 5)
- Cardiovascular surgical (surgical stays assigned to MDC 5)
- Infection medical (medical stays assigned to MDC 18)
- Hematology medical (medical stays assigned to MDC 16)

(continued next page)

Methodology to estimate the costs and payments of post-acute care stays and episodes (cont.)

- Cardiovascular medical (medical stays assigned to MDC 5)
- Skin medical (medical stays assigned to MDC 9)
- Serious mental illness (identified using the hierarchical condition code indicator 57 or 58; includes schizophrenia, bipolar disorder, and severe depression)
- Ventilator care
- Severe wound care
- Chronically critically ill—Episodes for patients who spent eight or more days in the intensive care or coronary care unit during the preceding hospital stay or were on a ventilator in the PAC setting. About 5 percent of episodes are in this group.
- Severity of illness Level 4 (the highest level)—Episodes for institutional PAC patients assigned to the highest severity group (Group 4, indicating extreme severity) using the APR–DRG based on the diagnostic information from the immediately preceding hospital stay (or proxied for patients admitted directly from the community). About 6 percent of episodes are in this group.

Medical complexity

We examined three definitions of medical complexity. The definitions (and the stays included in each) overlap to some degree.

- Multiple body systems—Episodes in institutional PAC settings for patients with diagnoses involving five or more body systems. About 11 percent of episodes are in this group.

Patient impairment

We looked at two aspects of patient impairment:

- Impaired cognition—Patients who were in a coma or had dementia or Alzheimer’s disease are in this category.

(continued next page)

long institutional episodes. In the results shown thus far, we modeled the PAC PPS using separate 5 percent outlier pools for home health–only episodes, institutional PAC–only episodes, and mixed episodes to reflect the different levels of episode costs. This way, home health–only episodes are compared with each other, institutional PAC–only episodes are compared with each other, and mixed episodes are compared with each other. Unusually high-cost episodes in each group would qualify for outlier payments. Alternatively, a single outlier pool could be established for all episodes. In an illustrative example, we modeled a common 5 percent pool for all episodes. With a single pool, outlier payments would be more targeted to very sick patients, regardless of setting. Although a single pool would be more in keeping with a unified PAC PPS, it would make it much harder for unusually high-cost

home health episodes to qualify for an outlier payment, given that the level of their costs is so much lower than institutional PAC.

As expected, a single outlier pool would lower the share of home health episodes qualifying for an outlier payment and raise the share of institutional PAC stays that would qualify (Table 9-5, pp. 296–297). Specifically, the share of home health episodes qualifying for an outlier payment would decrease from 9 percent of outliers with separate pools to 1 percent with a single pool. With a single pool, even relatively long home health–only episodes would be unlikely to qualify for outlier payments. With separate home health pools, 27 percent of long episodes would qualify for an outlier payment compared with 3 percent with a single pool. Because home health–only episodes

Methodology to estimate the costs and payments of post-acute care stays and episodes (cont.)

- Patient frailty—We used the JEN Frailty Index to assign episodes to the top (most frail) and bottom (least frail) quartiles of the distribution of the frailty scores.

Other stay/episode and beneficiary characteristics

We examined the following groups:

- Low and high therapy—Used in the stay analysis. For institutional PAC stays, the groups included stays with the lowest (bottom quartile) and highest (top quartile) therapy costs as a share of total stay costs. For home health stays, the low group included HHA stays with no therapy costs.
- Community admissions—These episodes were admitted from the community, including patients with no hospital stay within the 30 days preceding the PAC stay, identified by the lack of a matching hospital claim.
- Episodes with a prior hospitalization—These episodes were identified by matching hospital claims to PAC PPS claims.

- Episode durations—We divided episodes for home health only, institutional PAC only, and mixed episodes into the short, medium, and long groups. For home health–only episodes, *short*, *medium*, and *long* referred to the episodes in the bottom, middle, and top third of number of visits. For institutional PAC–only episodes, short, medium, and long were ranked by episode length. For mixed episodes, we defined short, medium, and long based on the combined ranks of the number of visits and of lengths of episodes.

We also examined the following groups:

- Beneficiaries with disabilities
- Beneficiaries dually eligible for Medicare and Medicaid
- Beneficiaries with end-stage renal disease
- Beneficiaries 85 years of age and older ■

would pay more into the outlier pool than they would receive, the profitability of home health episodes would decline, though payments would remain well above the cost of care. Conversely, the share of institutional PAC episodes qualifying would increase from 11 percent to 17 percent, and their profitability would increase. The impact on long institutional PAC episodes was even larger: 45 percent of these episodes would qualify for an outlier payment with a single pool and bring their payments closer to covering their costs. Episodes for beneficiaries on ventilator care and for beneficiaries who were severely ill or had diagnoses that involved multiple body systems would be more likely to qualify for an outlier payment with a single pool.

In designing a PAC PPS, policymakers will need to weigh the benefits of having a larger share of home health

episodes qualify for an outlier payment against having an outlier policy that targets payments for beneficiaries with higher cost care needs. With separate pools, even high-cost episodes that involve home health care would be unlikely to qualify for outlier payments. In contrast, a single pool would target outlier payments for beneficiaries treated in institutional settings with high care needs.

Provider incentives to shorten or extend episodes

So far, we have concluded that an episode-based PAC PPS creates incentives for providers to furnish shorter episodes over longer episodes. By design, the episode-based PAC PPS would make the payment for a home health–only episode based on patient characteristics, regardless of episode length. Thus, short or long episodes would be paid the same amount. Similarly, institutional PAC providers would each be paid the same amount regardless of episode

**TABLE
9-5**

Under the episode-based option for a proposed PAC PPS, a single outlier pool would target outlier payments for the highest cost beneficiaries treated in institutional PAC (2017 PAC stays) (continued next page)

Reporting group	PAC PPS episode-based payment with separate outlier pools for episodes with home health care		PAC PPS episode-based payment with a single outlier pool		
	Share of episodes qualifying as outliers	Ratio of payment to cost	Share of episodes qualifying as outliers	Ratio of payment to cost	Share of episodes
All	10%	1.12	6%	1.12	100%
Clinical group					
Orthopedic medical	9	1.11	3	1.10	14
Cardiovascular medical	10	1.11	4	1.10	13
Orthopedic surgical	8	1.12	8	1.13	12
Other neurology medical	11	1.12	4	1.10	9
Respiratory medical	9	1.12	6	1.12	9
Serious mental illness	10	1.15	9	1.16	9
Infection medical	10	1.12	10	1.14	4
Severe wound	16	1.13	9	1.13	4
Skin medical	12	1.13	4	1.11	3
Cardiovascular surgical	9	1.13	7	1.13	3
Stroke	14	1.13	15	1.15	2
Hematology medical	9	1.11	5	1.11	1
Ventilator	28	1.16	32	1.18	0
Frailty					
Least frail	8	1.13	1	1.10	21
Most frail	13	1.13	12	1.14	28
Cognitively impaired	11	1.12	8	1.12	21
Medically complex					
Multiple body system diagnoses	14	1.14	18	1.16	11
Severely ill	15	1.13	19	1.15	6
Chronically critically ill	15	1.12	15	1.13	5

Note: PAC (post-acute care), PPS (prospective payment system), ESRD (end-stage renal disease), HH (home health), I-PAC (institutional PAC). Separate 5 percent outlier pools were established for home health-only, I-PAC-only, and a mix of home health and I-PAC episodes. A single 5 percent outlier pool was established for all PAC stays. A payment-to-cost ratio of 1.0 indicates that the average predicted cost is equal to the average actual costs and that the model would establish accurate relative weights for a payment system. Patients' level of frailty was determined using the JEN Frailty Index. "Multiple body system diagnoses" includes patients with diagnoses involving five or more body systems who were treated in institutional PAC settings. "Chronically critically ill" stays include patients who spent eight or more days in an intensive care or coronary care unit during the preceding hospital stay or were on a ventilator in the PAC setting. "Severely ill" stays include patients who were categorized as severity of illness Level 4 based on their first I-PAC stay. Episodes were divided into "short," "medium," and "long" based on the duration of the episode. For home health-only episodes, these categories refer to the episodes in the bottom, middle, and top third of number of visits. For I-PAC-only episodes, the categories are based on the rank of days spanned by the episode. For mixed episodes, the categories are based on the combined ranks of the number of visits and days of the episode. Analysis includes 2017 PAC episodes that began between January 1, 2017, and June 30, 2017. Components may not sum to totals due to rounding.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

length. But differences seen in PCRs across episodes of different lengths reflect, to some extent, differences in patient characteristics. While the methodology adjusts payments and costs for patient risk, patients included in

the "short" group were likely to differ from those included in the "long" group.

In this analysis, we examined the incentives of an episode-based PAC PPS more closely by considering differences in

**TABLE
9-5**

Under the episode-based option for a proposed PAC PPS, a single outlier pool would target outlier payments to the highest cost beneficiaries treated in institutional PAC (2017 PAC stays) (continued)

Reporting group	PAC PPS episode-based payment with separate outlier pools for episodes with home health care		PAC PPS episode-based payment with a single outlier pool		Share of episodes
	Share of episodes qualifying as outliers	Ratio of payment to cost	Share of episodes qualifying as outliers	Ratio of payment to cost	
Other patient characteristics					
Disabled	11	1.13	6	1.13	24
Dual eligible	10	1.11	7	1.11	29
ESRD	12	1.12	9	1.12	4
Very old (85+ years old)	10	1.11	6	1.11	31
Episode type					
All HH episodes	9	1.12	1	1.07	64
Short	0	2.48	0	2.48	22
Medium	1	1.28	0	1.28	22
Long	27	0.72	3	0.63	21
All I-PAC episodes	11	1.12	17	1.16	21
Short	0	2.07	1	2.07	7
Medium	3	1.32	5	1.33	7
Long	29	0.76	45	0.82	7
All mixed episodes	15	1.12	12	1.11	15
Short	4	1.50	2	1.50	5
Medium	11	1.13	8	1.13	5
Long	30	0.92	25	0.90	5

Note: PAC (post-acute care), PPS (prospective payment system), ESRD (end-stage renal disease), HH (home health), I-PAC (institutional PAC). Separate 5 percent outlier pools were established for home health-only, I-PAC-only, and a mix of home health and I-PAC episodes. A single 5 percent outlier pool was established for all PAC stays. A payment-to-cost ratio of 1.0 indicates that the average predicted cost is equal to the average actual costs and that the model would establish accurate relative weights for a payment system. Patients' level of frailty was determined using the JEN Frailty Index. "Multiple body system diagnoses" includes patients with diagnoses involving five or more body systems who were treated in institutional PAC settings. "Chronically critically ill" stays include patients who spent eight or more days in an intensive care or coronary care unit during the preceding hospital stay or were on a ventilator in the PAC setting. "Severely ill" stays include patients who were categorized as severity of illness Level 4 based on their first I-PAC stay. Episodes were divided into "short," "medium," and "long" based on the duration of the episode. For home health-only episodes, these categories refer to the episodes in the bottom, middle, and top third of number of visits. For I-PAC-only episodes, the categories are based on the rank of days spanned by the episode. For mixed episodes, the categories are based on the combined ranks of the number of visits and days of the episode. Analysis includes 2017 PAC episodes that began between January 1, 2017, and June 30, 2017. Components may not sum to totals due to rounding.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

payments and costs across episode types that hold patient characteristics, or risk, fixed. We report what average payments and costs would be if the episodes were of average risk.

Holding patient risk constant, we find that long episodes remain unprofitable to providers. A provider furnishing a long home health episode would lose \$2,015 under

the episode-based PAC PPS, and those furnishing a long institutional PAC episode would lose \$11,452 on average (Table 9-6, p. 298). The providers furnishing a long mixed episode, say an institutional PAC stay followed by home health, would jointly lose \$4,171. Accordingly, PAC providers would have a strong financial incentive to avoid long episodes of all types. For home health and institutional PAC providers, short episodes are most

**TABLE
9-6**

Holding patient risk constant, under an episode-based option for a proposed PAC PPS, long episodes would be unprofitable and short episodes would be profitable (2017 PAC episodes)

Episode type	Payment for average-risk episode	Cost of average-risk episode	Payment-to-cost ratio	Dollar profit (loss)	Number of episodes
All PAC episodes	\$9,939	\$8,874	1.12	\$1,065	2,349,518
All HH episodes	4,417	3,944	1.12	473	1,507,595
Short	4,417	2,102	2.10	2,315	511,486
Medium	4,417	3,443	1.28	973	514,166
Long	4,417	6,432	0.69	(2,015)	481,943
All I-PAC episodes	19,869	17,740	1.12	2,129	483,730
Short	19,869	8,225	2.42	11,644	164,012
Medium	19,869	14,094	1.41	5,775	161,460
Long	19,869	31,320	0.63	(11,452)	158,258
All mixed episodes	19,773	17,655	1.12	2,119	358,193
Short	19,773	11,893	1.66	7,881	121,289
Medium	19,773	17,229	1.15	2,544	117,815
Long	19,773	23,945	0.83	(4,171)	119,089

Note: PAC (post-acute care), PPS (prospective payment system), HH (home health), I-PAC (institutional PAC). The table shows estimated payments and estimated costs for episodes of each type under an episode-based PAC PPS if the average patient were treated. Payments were not modeled with an outlier policy. PAC PPS payments do not vary by episode length. A payment-to-cost ratio of 1.0 indicates that payments equal the actual costs. Short episodes are those in the bottom third of the distributions of length of stay (for institutional PAC) and visits (for home health care). Long episodes are those in the top third of the distributions of length of stay (for institutional PAC) and visits (for home health care). A mixed episode includes home health care and institutional PAC. Analysis includes 2.3 million stays that were part of episodes of PAC that began between January 1, 2017 and June 30, 2017.

Source: Analysis conducted for the Commission by the Urban Institute (Wissoker and Garrett 2019).

profitable. Providers would face strong financial incentives to shorten the length of PAC episodes. In cases where the current payment system has incentivized unnecessarily long PAC stays, shorter PAC episodes could simply result in more efficient PAC. But there would also be incentives to stint on care, particularly if outcomes were not monitored, the disincentive for poor care was weak, or what constitutes appropriate care was not well defined.

Some PAC episodes involve transfers from one provider to another. Under current practice patterns, of the 2017 episodes comprising a single stay or pair of stays, about 12 percent involved a transfer from an institutional PAC provider to home health (Table 9-2, p. 286). Consider a patient at the beginning of an initial institutional PAC episode. The institutional PAC provider will ultimately decide how long to furnish care or whether to transfer the patient to home health care. The institutional PAC provider would realize a higher profit if it transferred

the patient to home health for a short mixed episode (the PCR for short mixed episodes is 1.66) than extending its own care to complete a medium episode (the PCR for a medium institutional PAC episode is 1.41, Table 9-6). In this case, the provider would have an incentive to transfer the patient. (In a mixed episode, we assume the payment would be split pro rata with each provider's costs and would retain the overall PCR.) But if the patient required a more extended period of care (so the episode would no longer be short), it would be more profitable for the institutional PAC provider to extend its care (establishing a medium episode, with a PCR of 1.41) than to transfer the beneficiary to home health, which would result in a medium-length mixed episode (the PCR for a medium mixed episode is 1.15).

Transfers from home health to an institutional PAC provider are even rarer and generally occur when a provider can no longer adequately or safely care for the

beneficiary (for example, about 3 percent of episodes were transferred from home health care to a SNF, shown in Table 9-2, p. 286). If a short home health episode would be insufficient for a patient, a short mixed episode involving a transfer to an institutional PAC provider would be more profitable (PCR = 1.66) than extending the home health stay to a medium-length episode (PCR = 1.28), all else being equal (Table 9-6). The overall implication is that there are some complexities in the incentives for transfers in the episode-based payment system. In some cases, incentives could encourage unnecessary transfers if the episodes were kept relatively short. In other cases, the incentives could discourage transfers that were appropriate.

An integrated PAC provider can offer both institutional PAC and home health services. In cases in which a patient could be treated with institutional PAC or with home health, an integrated provider would make the most profit on episodes that involved an institutional PAC stay if the episodes were kept to short or medium length. Under these circumstances, treatment decisions could be influenced by financial considerations rather than what would be best for the beneficiary.

Comparing stay-based and episode-based designs for a PAC PPS

Having examined both stay-based and episode-based PAC PPS designs compared with current payment policy, we compared the two design options against one another. The options differ in unit of service, thus establishing different incentives for providers. In a stay-based design, the unit of service would be a stay.¹⁴ Payments for a stay would be based on the average cost of stays across settings, with a differential for home health care to reflect this noninstitutional setting's considerably lower cost. In an episode-based design, the unit of service would include all PAC until the spell of illness ended, defined by a "clean" period when no PAC is furnished (or until a specified amount of time has elapsed). Payments would be based on the average cost of all episodes treated in the four settings, with a home health care differential.

Strengths and weaknesses of the design options

Table 9-7 (p. 300) summarizes the strengths and weaknesses of both designs. Compared with current policy, both models would increase the equity of Medicare's payments across patient categories. There would be small differences in the relative profitability across conditions and patient characteristics, which would lower a provider's incentive to selectively admit patients

with some conditions over others. However, episode-based designs would result in substantial overpayment for short episodes and underpayment for long ones. Although stays also vary by duration, the differences would be smaller and the effect on profitability would be less striking. While FFS in general encourages volume, the risk of unnecessary episodes may be lower than the risk of unnecessary stays. Under either design, the decision to initiate PAC is not controlled by a PAC provider but rather is generally made by an unrelated entity (the beneficiary's physician, in consultation with discharge planning staff when there is a prior hospital stay). However, the decision to extend care is made by the PAC provider in consultation with the supervising physician. In the case of episode-based design, the unit of service would encompass what are currently separate stays, thereby limiting PAC providers' ability to generate volume. A time-based episode design, such as a 30-day episode, would temper the volume incentive since all care within 30 days would be included in the episode. Yet providers would have an incentive to extend care beyond the time limit (in this case, 30 days) to trigger an additional episode (and payment).

Compared with current policy, both designs would result in less patient selection and stinting on care. A stay-based design could still result in some patient selection and stinting, but we would expect less compared with an episode-based design. The reason is that under an episode-based design, payments would not likely cover the cost of long episodes, thereby increasing the risk of patient selection and stinting on services to offset the high costs of long-stay episodes.

Either design would streamline the four separate PPSs into one and could lower CMS's administrative costs. Though both designs would require significant operational considerations for CMS, a stay-based design would be easier to implement: Each stay would generate a PAC PPS payment. In contrast, under an episode-based design, CMS would need to establish payment rates for episodes furnished by HHAs only and institutional PAC providers only and for a mix of HHA and institutional providers. CMS would also need a way to distribute payments across multiple providers of an episode, such as basing each provider's payment on the average stay's share of the episode cost. Further, CMS would want to consider making partial payments to providers for long episodes (with a final payment made at the end of the episode), much like current policy that allows HHAs to request anticipated payments. Partial payments would not be needed for episodes of a relatively short duration, such as 30 days.

**TABLE
9-7**

A comparison of stay-based and episode-based design options for the proposed PAC PPS

Aspect	Stay-based design	Episode-based design
Accuracy of payments	<ul style="list-style-type: none"> • Payments are aligned with costs for most patient groups 	<ul style="list-style-type: none"> • Payments are aligned with costs for most patient groups • Relative to costs, payments are high for short episodes and low for long episodes
Unnecessary volume	<ul style="list-style-type: none"> • More likely to encourage unnecessary stays 	<ul style="list-style-type: none"> • Less risk of additional episodes (episodes last as long as PAC is needed) • Would discourage unnecessary services within an episode
Patient selection	<ul style="list-style-type: none"> • Less likely to result in patient selection 	<ul style="list-style-type: none"> • More likely to result in patient selection based on how long beneficiary is likely to need PAC
Stinting on care	<ul style="list-style-type: none"> • Less likely to result in stinting if provider can generate additional stays 	<ul style="list-style-type: none"> • More likely to result in stinting
Administrative ease for CMS	<ul style="list-style-type: none"> • Streamlines four PPSs to one • Easier to implement 	<ul style="list-style-type: none"> • Streamlines four PPSs to one • Possible to prorate payments across providers • Possible to make partial payments if episode is long
Likely impact on provider behavior	<ul style="list-style-type: none"> • Involves less change for providers • Encourages shorter stays 	<ul style="list-style-type: none"> • Involves more change for providers • Encourages shorter courses of treatment • Discourages or delays transfers to get higher share of the payment
Care coordination	<ul style="list-style-type: none"> • More handoffs to other providers 	<ul style="list-style-type: none"> • Fewer patient handoffs

Note: PAC (post-acute care), PPS (prospective payment system).

Both designs would lower payments for higher cost institutional providers, such as IRFs and LTCHs, because payments would be based on the average cost across settings. Higher cost providers would need to adjust their cost structures and practice patterns.

Both designs would encourage shorter courses of PAC. Given the current HHA and SNF PPSs, which can result in unnecessary care, a reduction in service would not necessarily signal stinting. Compared with an episode-based design, a stay-based design could result in more handoffs between providers, which would expose beneficiaries to the risk of poorly coordinated care. On the other hand, an episode-based design could encourage providers to make transfer decisions for financial reasons

rather than what is best for the beneficiary, which could impair access to medically appropriate care.

A stay-based design should be pursued in combination with a PAC value-based purchasing policy and refined accountable care organization policies

In light of the tradeoffs between the two designs, the Commission contends that a stay-based design is the better initial strategy for CMS to pursue. Many uncertainties exist regarding how providers will respond to a unified payment system and concurrent changes to regulatory requirements. For these reasons, a stay-based design is the more cautious approach and would better protect beneficiaries from potential undesirable provider responses, such as adverse selection and stinting on care.

A stay-based design is likely to prompt providers to change their cost structures, practice patterns, and service offerings. As providers adapt to the new PPS, we would expect the existing range in practice patterns to narrow substantially, such that overpayments for short stays and underpayments for long ones would be smaller. At that point, the risks for beneficiaries associated with an episode-based design would become smaller and would make an episode-based design more attractive. The experience providers would gain and the many changes we would expect providers to make under a new stay-based design would be a better starting point for an episode-based design.

Because a stay-based approach could continue to expose the program to unnecessary volume, the new PAC PPS should pursue two strategies. First, the Secretary should adopt a value-based purchasing (VBP) policy that includes sufficiently large rewards and penalties to influence provider behavior. Consistent with the Commission's quality measurement principles, the VBP would include quality and value measures that are patient oriented and encourage coordination across providers and times. Possible measures include rates of potentially preventable readmissions, Medicare spending per beneficiary, and rates of discharge to community. Although a measure of the patient experience in PAC is not available, measures of care coordination (such as avoidable emergency department visits or the days elapsed between discharge from the hospital and physician encounter) could be considered. In addition to a VBP policy, monitoring provider behavior would be critical for detecting when care was either delayed or not furnished.

A second strategy would be to strengthen incentives for entities that take on the financial risk for all of the care received by their beneficiaries—specifically, accountable care organizations (ACOs). Such arrangements would encourage the use of home health care when appropriate, discourage unnecessary care, and guard against stinting that raises costs in the longer run (such as preventable readmissions). While benefits are associated with implementing the PAC PPS concurrently with an ACO, a key strategy ACOs have used to create savings has been to limit the number of days beneficiaries spend in a SNF, which would not produce savings if the PAC PPS were implemented. ACOs would need to focus on other aspects of providers' practice patterns to realize savings. If policymakers were concerned with ACOs' more limited ability to generate savings under a PAC PPS, they could

consider allowing PAC providers to engage in certain financial arrangements with ACOs to share savings in exchange for being a preferred provider for the ACO. ACOs could also be relieved of regulatory requirements barring providers from recommending PAC providers. Policy features from CMS's Next Generation ACO model could help control total program spending—for example, the prospective assignment of beneficiaries to an ACO and appropriate coding adjustments.

In addition to strategies that target unnecessary volume, ongoing maintenance of the PAC PPS (including recalibration of the case-mix weights and rebasing the level of payments) would be needed to keep payments aligned with the cost of care, particularly as providers' costs and practice patterns changed.

Evaluating patient functional assessment data reported by post-acute care providers

Beneficiaries are often referred to PAC for rehabilitation, and improving or maintaining function is a goal for many beneficiaries. Functional status and changes in function are used to establish care plans for patients, set payments, and measure quality of care. However, when payment is tied to patients' functional status, providers can report this information in ways that raise payments rather than capture patients' actual clinical care needs. And because FFS payments are used to establish payments for Medicare Advantage and alternative payment models (such as ACOs and bundled payments), the effects on payments extend well beyond traditional Medicare. Furthermore, the reported patient functional status data can improve a provider's outcome rates, thus misleading entities to include the provider in their network and beneficiaries to select a provider based on outcomes that not have been achieved. Therefore, policymakers need to reconsider whether and how functional status data are used to establish payments and gauge provider performance.

We acknowledge that other administrative data, such as diagnoses included in claims data, are also provider reported and that providers may have payment or coding incentives to misreport this information as well. However, in the analysis presented in this chapter, we examine the consistency of functional data because it is more subjective and may be more difficult to audit than

other administrative data. Medical records often support administrative data like the amount of therapy received and diagnoses, but not level of function. For payment and quality measurement, Medicare should use the best available data that can be validated.

Medicare's requirements for patient assessment information

Until recently, function was measured differently in each setting using setting-specific patient assessment instruments.¹⁵ HHAs use the Outcome and Assessment Information Set (OASIS), SNFs use the Minimum Data Set (MDS), IRFs use the IRF Patient Assessment Instrument (IRF-PAI), and LTCHs use the LTCH Continuity Assessment Record and Evaluation (CARE) data set. While the setting-specific instruments gather information on a common set of domains (such as the ability to walk or transfer), differences in how each domain is defined (such as the exact activity measured, whether average or worst performance is recorded, and the observation period) undermine our ability to make comparisons across settings. As a result, it is difficult to assess whether one PAC setting achieves better outcomes than another, how the costs of stays compare across settings since some settings use function to determine payment, and whether there are overall differences in the functional status of patients across settings.

To comply with the requirements of the Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT), PAC providers now submit standardized patient assessment information. These “uniform items” were added to the existing setting-specific patient assessment instruments and began to be collected in 2016 by LTCHs and IRFs, and in 2017 by SNFs; HHAs began collecting this information in January 2019.¹⁶ While uniformity allows function to be directly compared across settings, the Commission is concerned that assessments remain subjective and are unduly influenced by provider incentives to increase payments or show that the functional status of the patients they treated improved for VBP or quality reporting.

Use of functional assessment data to establish payments

The HHA, SNF, and IRF PPSs use functional assessment data based on setting-specific items to define the case-mix groups used to establish payments (Table 9-8). In each PPS, some domains of function are used to create a composite function score that contributes to

the assignment of the patient to a case-mix group for purposes of payment. HHAs, SNFs, and IRFs use 5, 4, and 11 domains of function, respectively. Toileting and transferring (e.g., chair or bed to chair) are the only domains included in all three settings, and these differ in terms of how the activities are defined, the look-back periods used, and the coding guidance (e.g., whether the assessment captures a patient's average or most dependent ability).

In these PPSs, a small difference in the function score can shift the stay (or, in the case of the per diem-based SNF PPS, the day) to a different case-mix group, resulting in higher or lower payment. For example, SNFs are paid 20 percent more for a patient assigned to an ultra-high rehabilitation case-mix group with a function score of 6 instead of a score of 5 (achieved by assessing the patient in one domain as requiring “limited assistance” instead of “supervision” or requiring “extensive assistance” instead of “limited assistance”). Similarly, an IRF is paid 15 percent more for treating a patient recovering from a stroke with a motor function score between 30.05 and 34.25 than for a patient with a motor score between 34.25 and 38.85 (indicating a lower level of disability). For first or second episodes with 10 therapy visits, HHAs are paid 7 percent more for patients assigned to the function level 2 than for patients at the function level 1.

Use of functional assessment data in quality reporting programs

Through quality reporting programs (QRPs), Medicare requires PAC providers to collect and report data used to calculate a range of quality measure results.¹⁷ As required under IMPACT, CMS developed and is incorporating into the QRPs some aligned PAC functional outcome measures. The SNF and IRF QRPs include the same four functional outcome measures—change (e.g., improvement or maintenance) in mobility and self-care, and mobility and self-care scores achieved at discharge—that are calculated using the uniform assessment items. The LTCH QRP includes a measure of change in mobility of ventilator-support patients based on the uniform assessment data. HHAs began collecting the uniform items in January 2019, so CMS can incorporate the uniform functional outcome measures in future years of the HHA QRP.

Function continues to be assessed using the setting-specific tools for HHAs and SNFs. The HHA VBP, which CMS implemented in January 2016, ties a portion of payments to performance on two composite functional

**TABLE
9-8**

Domains of function used to establish FFS payments for PAC

HHAs	IRFs	SNFs	LTCHs
• Toileting	• Toileting	• Toileting	None
• Bathing	• Bathing	• Eating	
• Walking	• Walking	• Transferring	
• Dressing	• Dressing	• Bed mobility	
• Transferring	• Grooming		
	• Eating		
	• Transferring		
	• Bladder control		
	• Bowel control		
	• Cognition		
	• Communication		

Note: FFS (fee-for-service), PAC (post-acute care), HHA (home health agency), IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), LTCH (long-term care hospital). The definitions of each domain are setting specific and recorded using each setting's patient assessment tool.

outcome measures based on the OASIS assessment results, as well as other quality measures. CMS publicly reports functional outcome results for SNFs and HHAs based on the setting-specific function items on the respective Compare websites.

Reporting of functional status by IRFs and HHAs could be influenced by payment and VBP incentives

Previous Commission analyses suggested that payment systems' designs and VBP programs might influence providers' reporting of patients' functional status by IRFs and HHAs. In the IRF and HHA payment systems, payment for an individual patient is determined based on the expected costs of treatment at admission. Therefore, these PAC providers have an incentive to record the patient's functional ability as lower than it actually is so that they will be reimbursed more. Similarly, to exhibit greater gains in patient function (and thus better outcomes), providers have incentives to report a patient's level of function as lower than it actually is at admission and maximize it at discharge. We present two examples from previous Commission work on provider behavior influenced by financial incentives. High-margin IRFs may

systematically record lower patient function at admission compared with other IRFs for comparable patients. Also, HHAs may have boosted reported patient outcomes by recording lower than warranted patient function at admission and higher than warranted at discharge, or both.

Recording of function in high-margin and low-margin IRFs suggests problems with the integrity of the IRF-PAI information

In March 2016, the Commission reported on differences across IRFs in their assessment of patients' motor and cognitive function (Medicare Payment Advisory Commission 2016b). The Commission found that although patients treated in high-margin IRFs were, on average, less complex cases during the acute care hospitalizations that preceded the IRF stay (they had lower severity scores, shorter hospital stays, and were less likely to be high-cost outliers) than patients treated in low-margin IRFs, the patients at high-margin IRFs were coded as more disabled once they were admitted to these IRFs. The results were consistent across case types but particularly pronounced for stroke cases without paralysis: Stroke cases treated in the highest margin IRFs had an average motor function score at admission that was 18 percent lower than cases

**TABLE
9-9**

Nonparalyzed stroke patients in the highest margin IRFs had the same average motor impairment score as stroke patients with paralysis in the lowest margin IRFs, 2013

Type of stroke case	Average motor impairment score	
	Lowest margin IRFs	Highest margin IRFs
With paralysis	29.2	24.6
Without paralysis	35.3	29.0

Note: IRF (inpatient rehabilitation facility). Average motor impairment scores were calculated using the motor Functional Independence Measure™ (FIM™) coded by the IRF. The motor FIM measures the level of disability in motor functioning at IRF admission on a 91-point scale. Higher FIM scores indicate higher levels of function. IRFs were ranked by their 2013 Medicare margins and then sorted into five equal-sized groups (quintiles). Results for Quintiles 2, 3, and 4 are not shown. Stroke cases “with paralysis” include patients with left body involvement, right body involvement, and bilateral involvement. Stroke cases “without paralysis” include all those assigned to the impairment group for stroke patients with no paresis (Code 1.4). Cases that did not have an acute care hospital discharge within 30 days of admission to the IRF were excluded from this analysis.

Source: MedPAC analysis of Medicare Provider Analysis and Review data, Inpatient Rehabilitation Facility–Patient Assessment Instrument data, and cost report data from CMS.

treated in the lowest margin IRFs. Nonparalyzed stroke patients treated in the highest margin IRFs had an average function score (29.0) that was almost the same as the average function score for paralyzed stroke patients in the lowest margin IRFs (29.2) (Table 9-9). This finding was surprising because stroke patients with paralysis typically have worse motor function than stroke patients without paralysis. All else being equal, Medicare payment for these two types of stroke patients with a motor score of 29 would be the same—even though stroke patients with no paralysis had lengths of stay that were, on average, more than 2 days shorter than that of stroke patients with paralysis.

The findings suggest that assessment and scoring practices help explain differences in profitability across IRFs and raise questions about the integrity of the patient assessment data and the interrater reliability across IRFs. Some industry representatives have suggested that differences in staff training and resources could explain these coding differences, while others contend that some IRFs assess their patients in response to the financial incentives in the payment system. Considering these concerns, the Commission has recommended that CMS undertake activities to ensure payment accuracy and program integrity.

CMS’s impact analysis of a recent change to the IRF–PAI also indicates systematic differences in how IRFs have recorded the patient assessment items. IMPACT

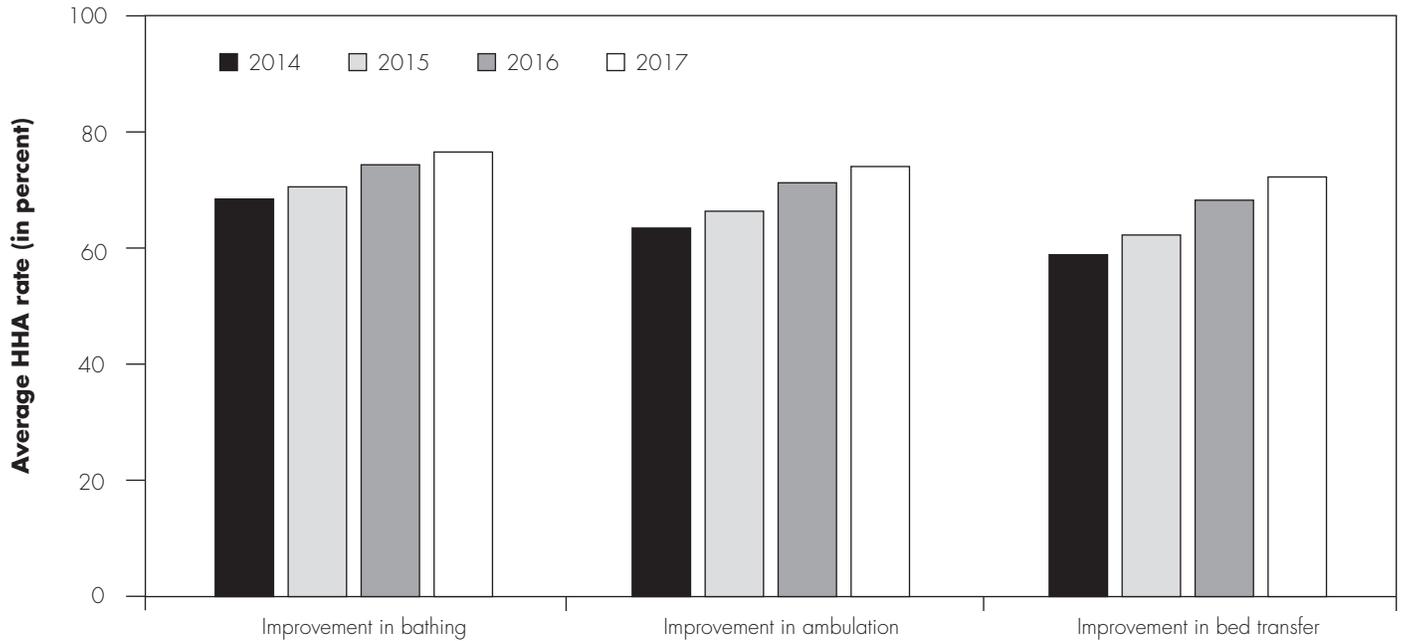
required the Secretary to replace setting-specific patient assessment items (such as those in the IRF–PAI) with the uniform PAC items as soon as practicable. In the fiscal year (FY) 2019 final rule for the IRF PPS, CMS estimated that the adoption of the new assessment items would not change aggregate payments but would have differential impacts across groups of providers—raising payments for hospital-based and nonprofit IRFs and lowering them for freestanding and for-profit IRFs (Centers for Medicare & Medicaid Services 2018c). The Commission noted that some of the differences in effects could be due to scoring differences across providers. The uniform PAC items, which to date had been used only for quality reporting, would show higher function for the same patients, which would, in turn, lower Medicare’s payments for them. The aggregate effects on groups of IRFs (e.g., by ownership and type) suggest that systematic differences exist in how functional assessment information has been recorded across IRFs. The Commission concluded that as long as payment relies on relatively subjective information such as patient functional status, problems of data accuracy will persist (Medicare Payment Advisory Commission 2018a).

Inconsistency between HHA-reported outcomes and claims-based measures raises questions about the validity of provider-reported assessment data

HHAs report changes in patients’ ability to perform activities of daily living (ADLs) using data they collect at admission and discharge with the OASIS. As of January

**FIGURE
9-1**

Average HHA-reported performance on OASIS-based measures improved between 2014 and 2017



Note: HHA (home health agency), OASIS (Outcome and Assessment Information Set). The figure shows the average performance scores for all HHAs on certain measures of function. “Improvement in bathing” indicates on average how often HHA beneficiaries got better at bathing. “Improvement in ambulation” indicates on average how often HHA beneficiaries got better at walking or moving around. “Improvement in bed transfer” indicates how often beneficiaries got better at getting in and out of bed.

Source: MedPAC analysis of Home Health Compare data.

2016, HHAs in nine states receive payment adjustments (i.e., rewards or penalties) based on their prior-year performance on quality measures, including improvement in function. Between 2014 and 2017, HHAs on average reported improvements from admission to discharge in three activities of daily living—improvement in bathing, ambulation, and bed transfer (Figure 9-1).

Yet, more objective claims-based measures of adverse hospital events showed no improvement (Figure 9-2, p. 306). The rate of emergency department use increased slightly, and the hospitalization rate remained about the same. These findings are surprising because—based on studies that have found an association between functional status and hospital use—we would expect patients with fewer limitations in ADLs to be less likely to require visits to the emergency department or unplanned hospitalizations (Ng et al. 2014, Soley-Bori et al. 2015). That is, given the improvement in the reported OASIS-based measures,

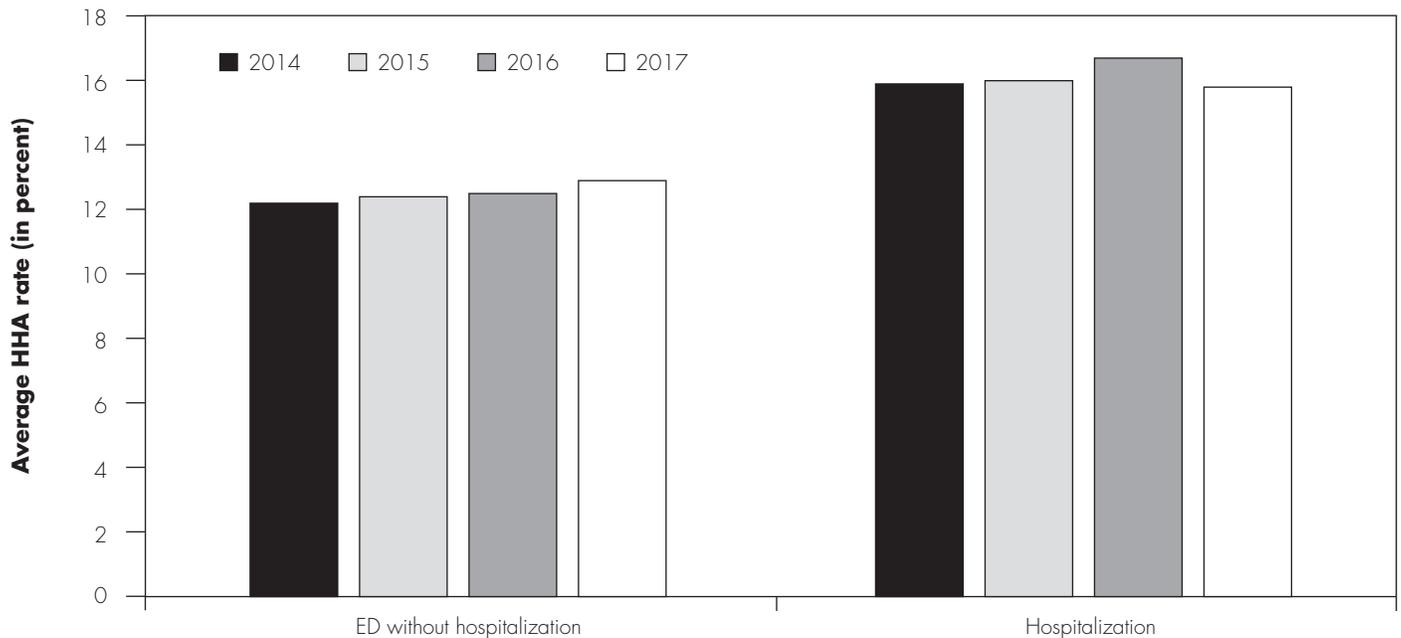
we would expect to see corresponding improvements in the claims-based measures. The contradictory findings raise questions about the validity of the provider-reported assessment data.

Similar questions about the accuracy of the function data were raised in the evaluation of the first year of the home health VBP program. CMS’s evaluator described similar trends in performance scores that indicated providers had responded to quality-reporting and VBP incentives (Pozniak et al. 2018). After the introduction of the CMS star ratings program for home health, all HHAs showed improvement in the provider-reported patient assessment-based measures (such as improvements in walking). However, larger improvements were observed among HHAs in states with mandatory participation in the VBP.

The evaluator noted that the underlying subjectivity of the patient assessments and the incentives of the VBP

**FIGURE
9-2**

Average HHA performance on claims-based measures remained the same between 2014 and 2017



Note: HHA (home health agency), ED (emergency department). The figure shows the average performance scores for all HHAs on certain claims-based measures. “ED without hospitalization” indicates on average the share of HHA beneficiaries who visited the ED without a hospital admission. “Hospitalization” indicates the share of HHA beneficiaries admitted to the hospital.

Source: MedPAC analysis of Home Health Compare data.

program influence how HHAs assess and record patient status, so that reported “improvements” in quality scores did not necessarily reflect real improvements in quality. The prevalence of patient conditions was relatively stable over time, leading the contractor to conclude that “improvements” in provider-reported outcomes were at least in part due to changes in coding practices. The evaluator acknowledged that providers’ coding could be a combination of increased accuracy (resulting from provider training, for example) and reporting lower patient functional status at admission (recording a patient’s status as worse than it was). The evaluator also found that performance on other measures not subject to provider coding, including patient experience and Medicare spending and utilization, showed either no or mixed improvement under the VBP program, raising doubts about the assessment-based “improvements.”

Provider responses to changes in payment policies portend problems using patient function data to establish payments

For years, the Commission and others have reported on changes providers have made in response to payment incentives (see text box, pp. 308–309, on changes PAC providers have made). For HHAs, changes in the coding of hypertension and the provision of therapy visits appear to have been responses to factors used to adjust payments. Similarly, SNFs increased their provision of therapy to beneficiaries and shifted their therapy modalities to qualify patients for higher payments. LTCHs extended their lengths of stay to avoid the short-stay outlier policy, which reduces payment per discharge. If providers are as responsive to payment incentives that are partly based on how they assess patients’ function as they have been to other changes in payment policy,

the assessment data will be of questionable value in accurately capturing differences in patients and the providers that treat them.

Provider responses to payment incentives are not unique to PAC providers. Over the years, the Commission has discussed changes in the coding and documentation of diagnoses by inpatient hospitals, ACOs, and Medicare Advantage plans that raised program spending even though the beneficiaries and their conditions did not change. To correct for changes in coding intensity and documentation, CMS adjusted payments. PAC providers may be even more susceptible to payment incentives due to the lack of guidelines about which beneficiaries require PAC, which setting is most appropriate for a patient, and how much care a patient should receive once admitted.

Analyses of patient functional assessment information

Given the evidence of inaccuracies associated with providers' functional status assessments and the importance of this information in gauging provider performance, we conducted several analyses to examine the consistency of the reporting of functional assessment information by PAC providers. We compared patients' functional levels with other characteristics and found that, on average, they were as expected for patients with the highest and lowest functional levels, but the patterns were less clear for other patients. However, when comparing assessments for individual patients, we found large inconsistencies in the recording of patients' function. For beneficiaries who were transferred from one PAC setting to another, the functional status recorded at discharge from one setting and at admission to the next were often different, and the differences favored reporting functional levels that would raise payments. In comparing admission assessment items used for quality reporting (the uniform items) with items used to establish payments (the setting-specific items), we found that, for the same patients, a disproportionate share of the function levels reported for quality were reported higher than the function levels reported in the payment-related items.

Our analyses reflect the current designs and incentives of the four payment systems, VPB policies, and quality reporting. Revisions of the HHA and SNF payment systems, which will be implemented in FY 2020 for SNFs and calendar year 2020 for HHAs, may alter providers' recording of patients' functional status. Likewise, as

providers gain experience using the new uniform items and as the setting-specific payment systems begin to use the uniform assessment items, the recording of those items may also change.

Our evaluation of the function assessments raises questions about using the information to establish payments, gauge provider quality (for example, improvements in function), or tie to quality payment (as in a VBP policy). Given the long history of PAC providers responding to payment incentives, the Medicare program should be cautious in using this information to adjust payments, either in the design of payment systems or a VBP policy. This caution would be consistent with the Commission's previous statements that risk adjusters should exclude factors over which providers exert control (Medicare Payment Advisory Commission 2016a). The incentives to report lower than actual functional status to raise payments coupled with evidence of inconsistent reporting raise serious questions about including this information to adjust payments.

Defining levels of function consistently across settings

Each setting-specific assessment collects information on common domains of function (such as the ability to walk or transfer), but differences in assessment tools undermine our ability to directly compare assessment information across patients treated in different settings. Assessments of the same patient by different providers can vary in part because of differences in the questions asked, the period considered in the evaluation, and the rating scales. To evaluate the consistency of the functional assessment data for these analyses, we created common levels of function across the setting instruments.

Differences in the setting-specific and uniform assessments

All PAC assessments record a patient's functional ability, but each provider type uses its own definition and rating scale. For example, to evaluate walking for SNF and IRF beneficiaries, the MDS distinguishes between walking in the corridor versus walking in the unit, the Functional Independence Measure™ (FIM™) records the distance walked or wheelchaired (e.g., less than 50 feet, between 50 and 149 feet); the LTCH CARE records the distance walked but uses different definitions (e.g., 10 feet, 50 feet with 2 turns); and the OASIS includes no specificity about distances walked.

Examples of changes post-acute care providers have made in response to payment incentives

Providers in each post-acute care (PAC) setting have made substantial changes to their practices in response to payment incentives.

Home health agencies revised their coding of hypertension and the number of therapy visits they furnished

The responsiveness of home health agencies (HHAs) to payment incentives is illustrated by agencies' coding of hypertension and the provision of therapy visits. Both were factors in the assignment of episodes to case-mix groups for payment.

In 2008, CMS implemented revisions to the case-mix system for the home health prospective payment system (PPS) that increased payments for episodes with the diagnosis of unspecified hypertension (International Classification of Diseases–Clinical Modification code 401.9). CMS observed that between 2008 and 2009, the rate of unspecified hypertension rose from 39.9 percent to 52.1 percent of episodes (Centers for Medicare & Medicaid Services 2010). CMS noted that the National Heart, Lung, and Blood Institute had revised the guidelines for reporting early-stage hypertension in 2004, but this change predated the large jump in reported unspecified hypertension by four years (prior years had smaller annual increases in the frequency of this condition in home health care). Further, CMS's broader review in 2008 of all HHA coding found that the severity of beneficiaries receiving the service had not changed significantly over time, suggesting that at least some of the increase in unspecified hypertension was due to changes in HHA coding practices. CMS then eliminated unspecified hypertension from the home health PPS case-mix system in the 2011 payment year.

The 2008 revisions to the case-mix groups also changed the way therapy visits are considered in establishing payments. Originally, the PPS had a payment adjustment that provided a single payment increase for episodes with 10 or more therapy visits. Episodes with one to nine therapy visits received no therapy visit adjustment. The 2008 revisions implemented a series of payment adjustments that

increased payment more gradually; the new system used a series of nine payment groups that incrementally adjusted payment upward as visits increased.¹⁸ The revisions lowered payments for episodes with 10 to 13 visits relative to the original system and raised payments for episodes with visits just above and below this level.

The changes to the thresholds resulted in the swiftest one-year shifts in therapy utilization since the PPS was implemented. In 2008, the number of therapy episodes whose payments were reduced under the new system—those in the range of 10 to 13 therapy visits—dropped by about 28 percent. Conversely, payment for episodes with six to nine visits increased by 30 percent. Payment for episodes with 14 or more therapy visits increased by 26 percent. The immediate change in utilization demonstrates that HHAs can quickly adjust services to payment changes associated with the therapy visit thresholds, even though the amount of services should reflect patients' medical conditions and care needs, in much the same way that patients' functional assessments should document patients' care needs.

Skilled nursing facilities intensified the amount of therapy and modalities of treatment

Since 2002, the amount of therapy furnished to beneficiaries in skilled nursing facilities (SNFs) has substantially increased. Between 2000 and 2017, days assigned to the ultra-high rehabilitation case-mix groups rose from 8 percent to 62 percent of all SNF days, while days assigned to the high rehabilitation case-mix groups dropped from 44 percent to 9 percent. This intensification far outpaced changes in the characteristics of beneficiaries (Medicare Payment Advisory Commission 2018c, Office of Inspector General 2015).

The distribution of therapy-minute counts within case-mix groups strongly suggests that therapy was provided for financial rather than resident care needs (Centers for Medicare & Medicaid Services 2018d). Given the lack of medical evidence regarding the amount of therapy patients should receive, one would expect a broad distribution of minutes across the range of minutes

(continued next page)

Examples of changes post-acute care providers have made in response to payment incentives (cont.)

that define each case-mix group. However, CMS found that for a given case-mix group, the number of therapy minutes provided was concentrated near the “floor” of the range in minutes required for the days to be assigned to a case-mix group. Providers appear to provide just enough therapy to qualify the days for the particular case-mix group.

Although activities of daily living (ADLs) are factored into the assignment of a SNF day into a case-mix group, SNFs do not appear to have pursued this strategy to increase payments. In our analysis of Minimum Data Set data, we found small changes between 2012 and 2017 in the assignment of days based on ADLs (holding the amount of therapy furnished constant) and small differences by ownership. Our results are consistent with a study that examined upcoding attributable to providing more therapy minutes versus the upcoding of patient functioning (in this case, recording patients as less able in order to garner higher payments). After controlling for differences in patient mix, it found “highly suggestive evidence” of upcoding of therapy practices but no evidence of upcoding related to patients’ functional status (Bowblis and Brunt 2014). The authors concluded that the lack of clinical guidelines makes it relatively easier for SNFs to upcode therapy than to upcode ADLs.

Another example of SNF responses to payment policy was the mix of therapy modalities used—therapy furnished in group (a therapist treats up to four patients engaged in the same activity at the same time), concurrently (a therapist treats two patients who are engaged in different activities at the same time), or individual therapy. To correctly reflect resources required to furnish services, CMS allocated

concurrent (for FY 2011) and group (for FY 2012) therapy minutes to qualify days into case-mix groups. Following these rule changes, the use of the modalities shifted dramatically in response to the changes in the payment rules. Before the rule changes, concurrent therapy made up one-quarter of therapy minutes; after the rule change, the share dropped to 0.8 percent in FY 2011 and has stabilized at 0.4 percent (Centers for Medicare & Medicaid Services 2018b). The share of group therapy minutes was less than 1 percent before the rule change for concurrent therapy; then group therapy grew to 7.4 percent of minutes in FY 2011. After the allocation rule for group therapy was imposed, this modality dropped down to 0.1 percent of minutes, where it has remained.

Lengths of stay in long-term care hospitals reflect the definitions of short-stay outliers

In the long-term care hospital (LTCH) payment system, Medicare adjusts payments for cases with short stays so that payments are more comparable with those made for similar cases treated in acute care hospitals.¹⁹ Until FY 2018, this payment structure created large payment cliffs between the short stay outlier (SSO) payment and the full LTCH payment, creating an incentive for LTCHs to keep patients long enough so the stay exceeded the SSO threshold and qualified for full payment.²⁰ We found that a disproportionate share of cases were discharged immediately following the condition-specific lengths of stay required to qualify for a full LTCH payment (Medicare Payment Advisory Commission 2017b). This pattern held true across the LTCH case-mix groups and for every category of LTCH provider. The data strongly suggest that LTCHs’ discharge decisions are influenced by financial incentives in addition to clinical indicators. ■

Regarding the ability recorded, the MDS and the FIM assess the patient’s lowest level of function observed over an assessment period (seven days in the case of patients in SNFs, three days in the case of IRF patients). The LTCH CARE assesses function over a three-day assessment period and records the patient’s usual function observed

when they are allowed to be as independent as possible and are not limited by pain. The HHA OASIS records the level of function observed at one point in time (the day of the assessment).²¹ Therefore, differences in a patient’s function across providers could be explained by differences in the assessment tools and the level of

**TABLE
9-10****When patients are transferred between settings, differences in the assessment tool instructions could explain some variation in the function recorded**

Settings involved in patient transfer	Functional ability recorded	
	At discharge from first setting	At admission to second setting
IRF to HHA	Most dependent	Single point in time
SNF to HHA	Most dependent	Single point in time
LTCH to HHA	Usual	Single point in time
IRF to SNF	Most dependent	Most dependent
LTCH to SNF	Usual	Most dependent

Note: IRF (inpatient rehabilitation facility), HHA (home health agency), SNF (skilled nursing facility), LTCH (long-term care hospital). "Most dependent" refers to the patient's lowest level of function. "Single point in time" refers to function level at the time of the assessment. "Usual" refers to the patient's usual function observed over a three-day period when he or she is as independent as possible and not limited by pain.

Source: MedPAC review of Minimum Data Set, Functional Independence Measure™, Outcome and Assessment Information Set, and LTCH Continuity Assessment Record and Evaluation assessments.

function (e.g., lowest or average) that providers are instructed to record (Table 9-10). For example, when a patient transfers between an IRF and an HHA, the IRF completes a discharge assessment that records the most dependent (i.e., lowest) level of function observed while the HHA completes an admission assessment recording the level of function at a single point in time. When a patient transfers between an LTCH and a SNF, the LTCH completes a discharge assessment that records the usual level of ability observed and the SNF completes an admission assessment that records patients at their most dependent.

We should note that even within a setting, assessments for similar patients can vary due to the ambiguity in the definitions of the levels of assistance patients require. For example, the FIM distinguishes between total and maximal assistance needed to walk based on whether the patient requires a one-person or two-person assist. However, the level of assistance provided could vary based on the strength of the person assisting. In other domains, for which the level of assistance is based on the share of the activity the patient is able to complete, differences likely exist in the estimates across assessors.

As a part of IMPACT, there are now uniform assessment items in each of the four settings' assessment instruments.²² These items and abilities recorded differ from the setting-specific assessment items for the same domains. For example, the MDS instrument collects information about ability to transfer to bed and to a chair combined into 1 item with 8 different codes to denote the level of function and frequency of occurrence of the activity (or an indication that the activity did not occur), while the uniform items use 4 separate items to assess transferring with 10 different codes to denote level of function, the type and amount of assistance, or why the activity was not attempted. As a result of the differences, the recording of function using the setting-specific items may differ from those using the uniform items, even for the same patients in the same setting.

Creating common levels of function

For our PAC PPS design analysis, we compared assessments across settings by creating broad levels of function for four domains—eating, transferring, toileting, and walking. For each assessment tool, we mapped each functional ability recorded (such as "independent" or "requiring moderate assistance") to a defined set of points for each of the four domains, where higher points

**TABLE
9-11**

An example of creating common levels of function for the eating domain across PAC setting assessments

Eating domain	SNF	IRF	HHA	LTCHs
High function (10 points)	Performs functions independently or with supervision	Complete or modified independence (with device) or supervision	Performs functions independently	Performs functions independently or supervised without touching
Medium function (5 points)	Limited support	Minimal or moderate assistance	Performs function independently but requires meal set-up or intermittent supervision from another person or modified consistency of food	Requires partial/moderate assistance or supervision
Low function (0 points)	Extensive support	Maximal assistance	Requires assistance or supervision throughout meal	Substantial or maximal supervision

Note: PAC (post-acute care), SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), HHA (home health agency), LTCH (long-term care hospital). "With device" means patient can eat independently with assistive eating devices such as weighted utensils or straws. SNFs use the Minimum Data Set (MDS), IRFs use the IRF Patient Assessment Instrument (IRF-PAI), HHAs use the Outcome and Assessment Information Set (OASIS), and LTCHs use the LTCH Continuity Assessment Record and Evaluation (CARE) data set. We mapped items and values from each setting's assessment to common levels of high, medium, or low function. For simplicity, in the table we present the meaning of the level of function from the assessments and not the individual item and value.

Source: MedPAC cross-walk of levels of function across setting-specific assessments.

represented higher levels of function. Then, for each assessment, we assigned points corresponding to the patient's level of function recorded. For example, a patient in a SNF was assigned 10 points for the eating domain if he or she was independent or simply required supervision, and 0 points if he or she required extensive support (Table 9-11 shows an example of the common definitions we created for one function domain). We based the total points for each domain on the Barthel index.²³

Our analysis included assessments at admission (but not at reentry) and discharge assessments for planned discharges when return was not anticipated. To evaluate the broad levels for each domain, we compared the distributions of the number of assessment items assigned with each broad group for the setting-specific items and the uniform items, at both admission and discharge. We found relatively similar distributions of high, medium, and low function levels across the setting-specific and uniform items, and the variation and direction of the distributions were also what we would expect (e.g., more assessments with higher function at discharge compared with at admission, lower function levels for LTCH patients compared with HHA patients).

We added the number of points assigned for each of the 4 domains to create a total function-level score for each patient assessment, which ranged from 0 points (for a totally dependent patient) to 50 points (for a completely independent patient). We grouped each patient into five overall function categories (highest, high, medium, low, and lowest) based on the total number of points assigned. We believe that using these broad definitions of functional ability and examining total points (rather than any single domain) allows us to examine the consistency of the reporting of functional assessment data across and within settings. Further, by limiting our comparisons of discharge and admission assessments to those conducted within three days of each other, we limited the potential discrepancies in the levels of function recorded for the same patient.

Our analyses were limited by the assessment information collected by providers and reported to CMS. HHAs are not required to submit discharge assessments for patients discharged to institutional PAC settings. As a result, our analyses of sequential stays did not include transitions between HHAs and institutional settings. These are rare in any case. HHAs only recently began collecting the full set of uniform assessment items (January 2019), so

**TABLE
9-12**

Reported levels of patient function were associated with other patient characteristics, 2017

Patient characteristic	Broad function level at admission				
	Highest	High	Medium	Low	Lowest
Average age	73	77	79	79	78
Average risk score	1.77	1.75	1.85	2.00	2.24
Share of stays with:					
Multiple body system conditions	10%	13%	12%	13%	29%
Cognitive impairment	9	12	15	19	30
Highest severity of illness indicator	13	11	11	11	22

Note: Results include all post-acute care stays with complete patient assessments at admission. Each patient assessment is categorized into one of five levels of function (scored by the Commission based on a modified Barthel index). The “highest” function level refers to beneficiaries who are independent or require supervision. “Lowest” function level refers to beneficiaries who are dependent or who need extensive assistance. “Highest severity of illness indicator” refers to Level 4 (out of 4).

Source: MedPAC analysis of 2017 Minimum Data Set, Functional Independence Measure™, Outcome and Assessment Information Set, and LTCH Continuity Assessment Record and Evaluation assessments.

our comparisons of the differences in functional status reported for payment and quality reporting did not include HHAs. We excluded LTCHs from our comparison of function levels reported for quality and payment purposes because LTCHs collect only the uniform assessment items and do not consider function in their case-mix methodology.

Missing assessment data

Our analyses of the PAC assessment data found that a large portion of the data was incomplete or missing. Many patient assessments were removed from our analysis because the information for any given assessment was incomplete: Either it was missing patient identifiers used to match assessments or it was missing one or more of the four function items. HHAs had the most incomplete information, such that about 30 percent of assessments were removed, many of them missing eating and toileting hygiene item responses. SNFs had the most complete information, with less than 1 percent of assessments removed for incomplete data.

For patients who transfer between PAC settings, there should be an assessment completed at discharge from one PAC provider and another completed at admission by the next PAC provider.²⁴ Many patients were missing either a discharge or an admission assessment. The percent of

unmatched discharge and admission patient assessments from 2017 ranged from 10 percent (for transfers between LTCHs and HHAs) to 27 percent (for transfers between LTCHs and SNFs). Until this information is more complete, we would be reluctant to gauge provider performance using it.

Reported levels of patient function were associated with other patient characteristics

In examining the consistency of the 2017 patient assessment data, we compared the characteristics of the patient population with their level of function. As expected, we found that beneficiaries in the lowest function group had higher severity of illness and beneficiaries with the highest function had lower severity.

The highest functioning beneficiaries were younger, with an average age of 73 years compared with 78 years for the lowest functioning group (Table 9-12). The highest functioning beneficiaries also had a lower risk score, on average (1.77), compared with the lowest functioning beneficiaries (2.24). A smaller share of beneficiaries in the highest functioning group also had diagnoses that involved multiple body systems, cognitive impairment, and the highest severity of illness (Level 4 out of four levels), compared with the lowest functioning group.

**TABLE
9-13**

Levels of function assessed across sequential PAC stays were inconsistently reported, 2017

Share of function-level assessments at admission to a PAC setting that differed from the previous setting's function-level assessments at discharge by:

PAC settings of sequential stays	Number of paired assessments	Two or more levels lower	One level lower	At same level	One level higher	Two or more levels higher
IRF to HHA	17,930	66%	26%	7%	1%	0%
LTCH to HHA	8,319	46	28	22	3	1
SNF to HHA	301,246	26	40	26	7	1
IRF to SNF	31,164	21	37	32	9	1
LTCH to SNF	17,750	10	24	52	12	2

Note: PAC (post-acute care), inpatient rehabilitation facility (IRF), HHA (home health agency), LTCH (long-term care hospital), SNF (skilled nursing facility). The “number of paired assessments” is the number of PAC stays with complete patient assessments at discharge from one PAC stay and admission to the sequential PAC stay. Each patient assessment is categorized into one of five broad levels of function defined by the Commission based on a modified Barthel index for four domains of function (eating, transferring, toileting, and walking). “Two or more levels” refers to those patients whose broad level of function at admission to the next PAC setting differed by at least two levels from the broad level assessed at discharge from the prior PAC stay.

Source: MedPAC analysis of 2017 Minimum Data Set, Functional Independence Measure™, Outcome and Assessment Information Set, and LTCH Continuity Assessment Record and Evaluation assessments.

These results suggest that, for groups of patients, provider-reported functional assessment information generally reflects other patient characteristics, particularly for patients assigned to the highest and lowest functioning groups. The relationships are less clear for patients assigned to the middle three groups (high, medium, and low function levels). However, as described in the next sections, the differences in recorded function for the same patient give us concerns about the consistency of the information.

Levels of function assessed across sequential PAC stays were inconsistently reported, with differences that would predominantly raise payments

Our comparison of the broad categories of function recorded with setting-specific assessments at discharge from one PAC setting and at the sequential admission to another PAC setting in 2017—for the same patients—found considerable differences between the two assessments. The share of discharge assessments evaluated at the same broad function level (e.g., highest or high) at admission to the next PAC setting ranged from 7 percent (from IRFs to HHAs) to 52 percent (from LTCHs to SNFs) (Table 9-13).

Differences in function levels assessed using our broad levels of function favored one direction. When patients were discharged to another PAC setting, a much larger share of beneficiaries was assessed as having lower function at admission to the next setting compared with those assessed with a higher level of function. Among patients discharged from IRFs and then admitted to HHAs, 66 percent were rated as having two or more levels lower function at admission to the HHA, compared with 0 percent assessed with function two or more levels higher. The large share of assessments that varied two or more broad levels especially raises questions about consistency because the magnitudes of these differences are less likely to be due to differences in the assessment tools. Similarly, in transfers between SNFs and HHAs, patients were more likely to be assessed at a lower level of function at admission to an HHA than at a higher level of function relative to the SNF discharge assessment (26 percent were assessed at two or more levels lower at admission vs. 1 percent assessed at two or more levels higher). Yet, considering differences in assessment tool rules, we would have expected patients to be assessed at a higher level at admission to HHAs than at discharge from a SNF or IRF because the OASIS records patients’ ability at one point in time (e.g., admission), whereas

the IRF and SNF assessments record patients' ability at their most dependent (see Table 9-10, p. 310). Even if that one point in time caught the patient at his or her most dependent and that level was worse than the level recorded at discharge from the preceding IRF stay, it seems unlikely that these circumstances existed for such a large share of assessments.

For transition between providers that record patient function at their most dependent (IRFs to SNFs), a much larger share—21 percent—of patients were assessed at two or more levels lower at admission to the next setting compared with 1 percent assessed at two or more higher levels of function. Differences in the assessment periods (seven days in the case of the SNF MDS, three days for IRF assessments) might account for some, but not all, of the difference. Reasonably consistent assessments would include similar shares of mismatches in both directions between the discharge and admission assessments. The much higher share of lower assessments at admission suggests that the function data recorded by providers are biased toward raising payments.

Some transfers involve settings in which differences in the assessment tools would likely produce broad function levels at admission to the second setting that are lower than function levels at discharge from the first setting. For example, patients transferred from LTCHs to SNFs involve the discharge assessment recording the usual status function of the patient, whereas the admission assessment records the most dependent. For these transfers, we expected and found a larger share of patients assessed at a lower function level (34 percent) compared with a higher function level (14 percent).²⁵

The function levels recorded by HHAs can be explained to some extent by the financial incentives of the HHA PPS. HHAs receive a higher payment rate for patients assessed with lower function at admission. The data could also be inconsistent because providers are assessed on their ability to improve or maintain patients' function during a PAC stay, so they have an incentive to assess patients as having low function at admission and high function at discharge.

In addition, some of the differences in function levels recorded could be attributable to differences in assessment tools—the questions, patients' ability recorded, and time frames of the observation period—or some degree of subjectivity of the assessors in their evaluations of patients. But the magnitude and bias of the differences (some of which went against expectations) raise questions about the

consistency of the data and whether it is ready to be used to evaluate provider quality.

Function levels based on uniform items used for quality reporting were inconsistently reported across sequential PAC stays

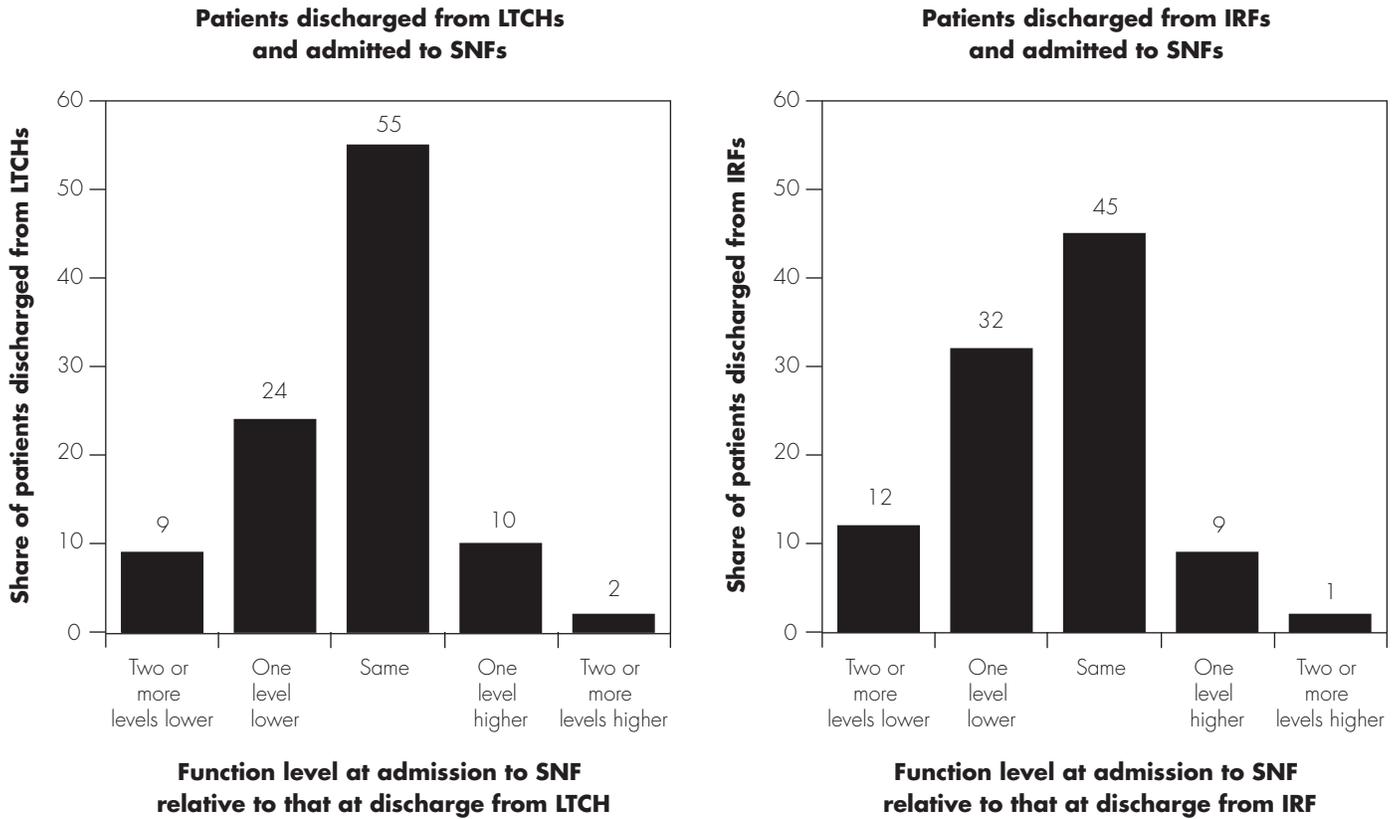
For beneficiaries who transition between institutional PAC providers, uniform assessment items are directly comparable.²⁶ For these uniform items, there are no differences between the settings in the activities assessed, the timing of the assessment, or the ability recorded. Therefore, we would expect the discharge and admission assessments to assign the same broad function category and for there to be few mismatches of two or more levels' difference. Furthermore, because results from uniform items are not used to adjust payments, we would expect the discharge assessments to be similar to the admission assessments and for the mismatches to be evenly distributed between those that were higher and those that were lower. These comparisons are limited by the relatively low volume of transfers between institutional PAC providers (e.g., IRF to SNF or LTCH to SNF).

Nevertheless, using the uniform items, we found inconsistencies in the function levels assessed at discharge and admission (from LTCHs to SNFs and IRFs to SNFs) in 2017. These differences are noteworthy because rating results from the uniform items are used for quality measurement, but not payment.²⁷ Only about half of discharge assessments (45 percent to 55 percent) were assessed at the same function level at admission to the second PAC setting (Figure 9-3). The mismatches predominantly included functions being assessed lower at admission to the second setting. For example, 24 percent of LTCH discharges were assessed one level lower at admission to a SNF compared with only 10 percent assessed one level higher at admission to a SNF. We found larger disparities in the assessments between IRF discharges and SNF admissions.

The uniform items are used to calculate provider-level quality performance measures, such as change in mobility. The data may be inconsistent because providers want to perform well on the quality measures, so they report higher function at discharge (to show improvement) and lower function at admission (to leave themselves more opportunity to improve). In addition, some providers may report improvements in function to potential or contracting partners. Appearing to have achieved large improvements in functional status may help secure referrals from them.

FIGURE 9-3

Uniform assessment items were recorded inconsistently across providers, 2017



Note: LTCH (long-term care hospital), SNF (skilled nursing facility), IRF (inpatient rehabilitation facility). Each patient assessment was categorized into one of five broad levels of function based on a modified Barthel index for four domains (eating, transferring, toileting, and walking). “Two or more levels” refers to those patients whose broad level of function at admission to the next post-acute care (PAC) setting differed by at least two from the broad level assessed at discharge from the prior PAC stay. The number of paired assessments included in the analyses was 17,030 for the LTCH-to-SNF comparison and 31,185 for the IRF-to-SNF comparison.

Source: MedPAC analysis of 2017 patient assessment data submitted to CMS.

Admission levels of function recorded by the uniform items matched the setting-specific items less than half the time

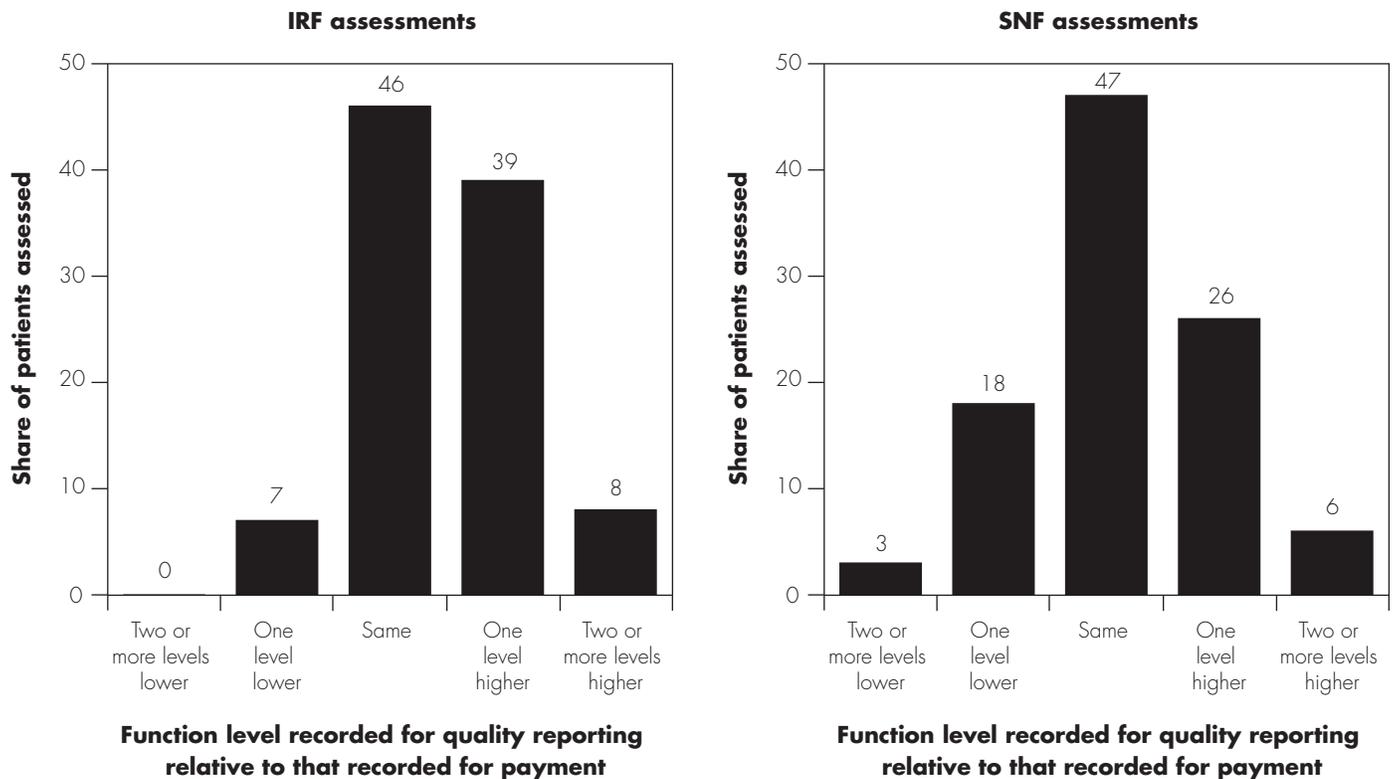
Within each setting, we also examined the internal consistency of reporting of function items for patients at admission. We examined assessments for IRFs and SNFs because uniform item data are not yet available for HHAs, and LTCHs do not record setting-specific items. We compared the broad function categories that are used for payment (the setting-specific instruments) with those used for quality reporting (the uniform items). Because the instructions for the setting-specific assessments and the uniform items differ—the uniform items record a patient’s usual performance, while the setting-specific items record a patient’s most dependent performance—the broad function

categories might differ. The function category assigned by the uniform items might, on average, be higher than those recorded by the setting-specific items. However, we would not expect the uniform items to be lower.

We found that, for both IRFs and SNFs, less than half of the admission assessments recorded the same function category in the information used for quality reporting (the uniform items) and the setting-specific items used for payment (Figure 9-4, p. 316). The data used for quality reporting were more likely to be recorded one function level higher (more independent) than the information used to establish payments (39 percent for IRFs and 26 percent for SNFs). A small share of the assessment items had function levels that were two or more levels higher or

**FIGURE
9-4**

Admission levels of function recorded by uniform items matched the setting-specific items less than half the time, 2017



Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility). Each patient assessment was categorized into one of five broad levels of function based on a modified Barthel index for four domains (eating, transferring, toileting, and walking). “Level higher” indicates that the functional ability recorded in the quality reporting data was higher (more independent) than what was recorded in the data used for payment purposes. “Level lower” indicates that functional ability recorded in the quality reporting data was lower than what was recorded in the data used for payment purposes. Uniform items are the common GG items that are collected by IRFs and SNFs. These uniform items are often called the “GG items,” referring to Section GG of the assessment tool. The number of paired assessments was 459,923 for the IRF comparison and 1,868,312 for SNF comparison.

Source: MedPAC analysis of 2017 Minimum Data Set and Functional Independence Measure™ assessment data.

lower. In our comparison of uniform and setting-specific items by ownership and type of provider (e.g., hospital based, freestanding), we found that the share of admission assessments for which uniform items were assessed two or more function levels higher was slightly higher in for-profit and hospital-based IRFs. We did not see as much of a difference with the SNF assessments.

We do not know what share of patients’ usual performance (recorded for the uniform items) differs from the most dependent performance (recorded for the IRF and SNF specific items) or by how much. These results indicate

that the majority of patients’ usual performance is at least one broad level different from their most dependent. To the extent that these differences reflect the variation in performance between usual and most dependent functioning, the differences are not concerning. But if they reflect payment incentives, then as the uniform items are used to adjust payments, we would expect the recording of patient function to resemble the levels of function recorded by the setting-specific items. Also, as providers gain experience using the new uniform items, the recording of those items may also change.

Strategies to improve and alternatives to PAC provider-completed assessments

The inconsistency of the patient functional assessment data undermines our confidence in and the desirability of using provider-reported function data for payment. However, maintaining and improving function is a key outcome measure for Medicare beneficiaries, so it is incumbent on CMS to improve the provider-completed assessments or explore alternative measures of function.

The Commission has considered several strategies that could improve the accuracy of the patient function assessment data and/or provide alternatives to the provider-reported data, but each comes with caveats (see text box, pp. 318–319, for additional detail on the strategies). First, CMS could improve its monitoring of provider-reported assessments and conduct on-site audits of providers that have submitted aberrant data. Under such audits, meaningful penalties, such as civil monetary penalties, could be imposed on providers whose data submissions are either inaccurate or not supported by adequate documentation. Conditions of participation could also be expanded to require sufficient documentation in the medical record to support the recorded functional status.

A second strategy would keep the patient’s assessment at discharge from the first setting as the assessment for subsequent PAC providers. For example, if a patient were discharged from an IRF and subsequently admitted to an HHA, the patient’s functional status at admission would remain what was recorded at discharge from the IRF. If the HHA disagreed with the IRF’s assessment, the HHA and IRF would need to come to a consensus on the patient’s functional status or work with a third-party reviewer to determine the correct functional status. Given the large volume of PAC stays, using third-party reviewers would be resource intensive.

A third strategy would require acute care hospitals to complete assessments of patients when they are discharged. This requirement could be useful for validating the PAC provider-reported assessment information but would raise hospitals’ costs. However, because the majority of PAC stays are not preceded by a hospital stay, this strategy has limited applicability. Also, some function domains would not align across settings: For example, a patient’s ability to dress in a hospital gown is different from being able to dress in clothing. Furthermore, hospitals with affiliated PAC providers would have a financial incentive to consider how they report this functional assessment information.

A fourth strategy would be to gather patient-reported outcomes (PROs) (see text box, p. 320–321, on PROs). PROs would sidestep the problem of providers’ financial incentives influencing their reporting of patients’ functional status. However, currently no PROs are collected in PAC settings or included in PAC quality reporting programs. Further, many PAC patients have a high severity of illness and cognitive impairments that would affect the ability to collect accurate PRO results. The use of proxies to gather this information would need to be an integral part of developing this option.

Aligning regulatory requirements across PAC providers

Because a unified PAC PPS would establish a common payment system, Medicare’s current setting-specific regulations would need to be aligned so that PAC providers face the same set of requirements—though some requirements would continue to differ for HHA since it does not involve facility-based care. The Commission has proposed that a common set of requirements be developed for all PAC providers, with additional requirements specified for providers that opt to treat patients who require specialized resources (Medicare Payment Advisory Commission 2016a). Requirements would thus shift from being based on setting to being defined by individual patients’ care needs.

Current statutory and regulatory requirements for PAC providers

Medicare has numerous statutory and regulatory requirements for providers that define benefit coverage, payment requirements, and administrative and operational requirements. To better understand federal requirements for Medicare PAC providers, we worked with a contractor to compile and review the conditions of participation (COPs) and other program requirements for the four sectors.²⁸

Our review studied the COPs more closely because these establish the basic responsibilities for PAC providers in the Medicare program. The COPs are designed to ensure adequate and appropriate oversight and provision of care, and they generally cover five domains:

- services and staffing, including staff credentials;

Strategies to improve PAC provider-completed assessments and create alternatives

The Commission considers three strategies that could improve the accuracy of patient function assessment data and challenges associated with implementing them. Another strategy, not included here, would keep the patient's assessment at discharge from the first setting as the assessment for subsequent post-acute care (PAC) providers.

Improve monitoring of provider-reported assessments

To help ensure the accuracy of the patient function data, CMS could monitor provider-reported function data to detect unusual patterns and implement an audit program to follow up on aberrant results. Currently, PAC providers attest to the accuracy of the data they report, but Medicare does not audit the accuracy of the assessment data through medical record review or real-time review (e.g., an independent assessor and a provider perform a patient assessment at the same time and compare results). (Currently, Medicare administrative contractors compare the coding on inpatient rehabilitation facility (IRF) patient assessment instruments with the documentation in the IRF medical records and are authorized to deny IRF claims if the medical record does not support the claim. However, this type of review does not examine the accuracy of the level of function documented.) CMS offers providers comprehensive training on how to properly collect assessment data and operates a help line to answer providers' questions about the interpretation and correct coding of assessment items.

As part of a monitoring program to detect unusual patterns, CMS could assess the completeness of assessment data, the function scores reported, and improvement in function both within and across providers. CMS could conduct comparative analyses similar to the ones we performed but at the provider level. For example, CMS could look for providers that show large improvements in function that do not coincide with other beneficiary characteristics such as comorbidities, average age, and risk scores. CMS could also monitor whether providers have a high share of assessments with large differences (e.g.,

two or more levels) in the discharge function level assessed compared with the function level assessed at a sequential admission. Because these comparisons would raise questions about the provider discharging the patient and the subsequent admitting provider, CMS would need to examine the assessments completed by both providers. CMS could also require, as part of the state survey and certification programs, that state evaluators be trained to conduct patient assessments and determine interrater reliability between evaluator and provider staff assessments on a sample of the provider's patients.

To follow up on providers flagged by the monitoring program, CMS could expand an audit program of those providers that have submitted what appear to be aberrant patient functional assessment data. Audits can include reviewing medical records for beneficiaries treated by PAC providers with aberrant patterns. For example, a recovery audit contractor (RAC) or quality improvement organization (QIO) could conduct on-site audits of those providers with large differences between discharge-setting assessments and admission-setting assessments. The audit would examine a sample of medical records to evaluate whether it includes sufficient documentation, such as therapy notes, to confirm the accuracy of the provider's reported functional status levels. If many of the medical records do not match the assessment's level of function, CMS could take corrective action, including assessment of penalties.

The auditing program would be consistent with those that investigate other provider practices. (The Government Accountability Office (GAO) has concluded that regular audits are needed to ensure the accuracy and comparability of nursing home quality data (Government Accountability Office 2018).) Currently, RACs focus on underpayments and overpayments made to providers. RAC programs also examine the medical necessity of home health care and skilled nursing facility care to ensure stays meet Medicare coverage criteria. Despite the numerous problems associated with RACs raised by the Commission and others (such as the burden imposed

(continued next page)

Strategies to improve PAC provider-completed assessments and create alternatives (cont.)

on providers), staff could explore whether the role for RACs could be expanded to validate provider-reported assessment data. QIOs could also be a vehicle for auditing the accuracy of the assessment data. QIOs have the authority to perform case reviews of PAC and other providers that include denial of payment for admission, changes in diagnosis related groups, and the identification of confirmed quality of care concerns.

Require hospital discharge assessments

One way to confirm the quality of the function information submitted by PAC providers would be to require acute care hospitals to complete a short assessment of patients discharged to PAC. This information would allow CMS and stakeholders to compare the functional status of patients at discharge from the preceding hospital stay with an assessment completed at admission to PAC. Systematic differences between the two could trigger program integrity efforts. However, because community-admitted beneficiaries would not have a prior hospital stay, this approach would not address the quality of assessment information collected for them. Also, a number of institutional PAC providers are hospital based, so such hospitals would have an incentive to downgrade reported function levels for patients moving on to affiliated PAC providers.

Gather patient-reported outcomes

Patients' perspective on their level of function is valuable, but research and experience with use of patient-reported outcomes (PROs) in PAC settings

are limited (see text box on PROs, pp. 320–321). CMS has done some initial testing of using patient-reported depression, anxiety, and global health status in the standardized PAC patient assessments and found the items to be valid and reliable, but with lower feasibility for PAC settings (RAND Corporation 2018). One recent study testing PROs in IRFs found it feasible to collect health status data during and after an IRF stay from persons with neurological disorders, although a substantial proportion of patients would likely require assistance in completing the survey (Heinemann et al. 2018). The majority of patients used a tablet computer and were willing to complete the survey one month after discharge, although multiple reminders and telephone interviews were required. The authors note that more research is needed to evaluate strategies to integrate PRO collection into routine care, maximize response rates during and following IRF hospitalization, and assess the use of proxy respondents in cases when patients are unable to report their experience of care. The Commission has also discussed concerns that many PAC patients, particularly long-term care hospital patients, have high severity of illness levels and cognitive impairment that would impact the ability to collect accurate PRO results. Patients can also refuse to complete a patient instrument. More research is also needed to determine the sample size required to achieve acceptable reliability to compare improvement or decline in function within and across PAC providers. The Medicare program could consider supporting continued research and testing of PROs in PAC settings for potential use as a quality measure. ■

- care planning, including requirements related to care coordination, patient assessment, and admission, transfer, and discharge of patients;
- administration, including administrative staff and activities, such as planning and budgeting, and other operational requirements, such as certification;
- quality and safety; and
- patients' rights while under the care of the provider, such as the requirement to be informed of their rights and the right to privacy and confidentiality.

SNFs' and HHAs' requirements set the basic requirements for institutional and in-home PAC

The requirements for SNFs and HHAs allow these settings to serve a broad range of patients, and these settings are the most frequently used PAC services by Medicare

Patient-reported outcome measures

Patients are a valuable and, arguably, authoritative source of information on outcomes. An alternative to relying on provider-completed patient assessments is to collect function data for quality measurement through patient-reported outcome (PRO) tools. Currently, no PROs are included in post-acute care (PAC) quality programs. However, the use of PRO measures elsewhere in Medicare and other health systems can provide lessons for the potential use of PRO measures in PAC settings. PRO measures generally fall into one of three categories: (1) summary health-related quality of life results (e.g., improved physical or mental health); (2) intervention-based tools (e.g., item-response tools); and (3) patient experience (e.g., overall rating of care, communication with nurses). We focus our discussion on the first two categories since they are currently used to assess function.

Two of the most common, validated PRO tools to assess a patient's summary health status are the 12-item and 36-item Short Form Health Surveys (SF-12 and SF-36).²⁹ The surveys ask questions related to eight health concepts: physical functioning, bodily pain, role limitations due to physical health problems, role limitations due to personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions. For example, the survey asks patients to rate their health as excellent, very good, good, fair, or poor, as well as whether and how much their health limits their ability to complete certain activities (such as walking, climbing a flight of stairs, bathing, and dressing). Some of the SF-36 questions about physical health overlap with the current functional assessment domains used to establish payment for PAC providers (see Table 9-1, pp. 284–285), but some of the PAC functional domains are not included in the SF-36 (e.g., toileting, eating, bed mobility). The individual survey results of the SF surveys are scored using a standardized scoring key, and high scores define a more favorable health state.

Medicare has some experience using PRO measures to assess summary health-related quality of life results for larger populations of beneficiaries. Medicare Advantage (MA) plans are required to collect Health Outcomes

Survey (HOS) responses from a random sample of their Medicare beneficiaries and, two years later, survey the same beneficiaries again. (The HOS includes questions from the Veterans RAND 36-Item Health Survey, which is adapted from the SF-36). HOS results are used to calculate plan-level measures of improved or maintained physical health and mental health, which are scored as a part of the MA star rating program. In its March 2010 report to the Congress, the Commission observed that, as applied to detect changes over time in MA plan enrollees' self-reported physical and mental health status, the HOS often produced results showing no significant outcome differences among MA plans (i.e., a floor and ceiling effect). Recent literature suggests that CMS should consider increasing the sample size for stable, reliable measurement of functional status through the HOS responses (Rose et al. 2019). The Commission recommended that the Secretary address concerns with the survey and collect the HOS responses for fee-for-service and MA plans in order to compare quality within local market areas (Medicare Payment Advisory Commission 2010).

Medicare accountable care organizations (ACOs) use the Consumer Assessment of Healthcare Providers and Systems[®] to collect a small number of items on patient-reported health status and functional status from a sample of their beneficiaries, although ACOs are not yet scored on these measures. A small number of functional status measures are included in the measure set that clinicians can choose to report to meet Merit-based Incentive Payment System requirements. These measures are targeted to a narrower population and are often collected by specialty registries (e.g., functional status change for patients with elbow, wrist, or hand impairments).

Outside of the Medicare program, there is growing support from clinicians and researchers to embrace the use of PRO measures in clinical care as a part of interventions. We present two examples of large health systems using PRO measures in clinical care and a health plan incentivizing the use of PRO measures through pay-for-adoption programs. At the University of Rochester Medical Center, patients use Wi-Fi-

(continued next page)

Patient-reported outcome measures (cont.)

enabled tablets to answer an average of four to seven questions from a validated data collection tool regarding physical function, pain interference, and depression. The tool uses computer adaptive technology and item-response theory, so each question is selected using a patient's previous responses, allowing the system to assign a score from a limited amount of information. Physicians can instantly view the scores, compare them with scores from a reference population, and use the scores to support shared decision-making with the patient (Baumhauer 2017). Partners HealthCare collects PRO measures for patients treated in orthopedics, urology, psychiatry, and cardiac surgery. They use that information for real-time clinical care and for measuring, comparing, and improving care as a system (Wagle 2017). These systems had to work through several challenges to adopt PRO measures, including the need to implement technology to rapidly administer surveys and calculate results and to change clinician workflow to administer the survey. Blue Cross Blue Shield of Massachusetts is incentivizing clinicians to collect PRO results for joint degeneration and depression in three phases: (1) paying for adoption, data sharing, and shared learning; (2) using the collective information to inform clinical treatment choices and shared decision-making with patients; (3) using PRO results for accountability (more work is needed before

moving to the third phase) (Massachusetts Medical Society 2018).

The National Quality Forum (NQF) has called for more research on best practices associated with the use of PRO measures and on several method-related challenges, such as aggregating patient data to measure performance at multiple levels of analysis (e.g., provider, setting) and use of proxy respondents (National Quality Forum 2013). As a practical matter, there is also limited infrastructure to routinely capture PRO data in provider settings, so the use of PRO measures to collect PAC functional status for Medicare is not ready for immediate implementation but has potential in the future. Because CMS has prioritized patient-reported functional outcome measures in its Meaningful Measures Initiative, there is potential for more effort to develop and implement PRO measures in Medicare quality programs (Centers for Medicare & Medicaid Services 2018a). The NQF measure incubator is researching the development of PRO measures for five clinical areas, including chronic obstructive pulmonary disease and multiple sclerosis. Also, the National Committee for Quality Assurance is testing the feasibility of an approach to individualized measurement for complex populations that is based on measuring how well organizations are helping individuals achieve personalized goals (that can be tied to function) for their health and life. ■

beneficiaries. Some SNF and HHA requirements are intended to serve as a check on unnecessary admissions, but, in application, the rules permit a range of practice patterns (Table 9-14, p. 322–323) (Medicare Payment Advisory Commission 2017c).

Major SNF requirements Medicare covers SNF care only after an inpatient hospital stay of at least three days and requires that a patient have a need for skilled care (such as nursing or rehabilitation services).³⁰ Medicare SNF care is intended to be a posthospital service for patients who require acute nursing care but at a lower level of intensity than typically found in an inpatient setting. This requirement acts as a barrier to prevent nursing homes

from recertifying long-stay residents as Part A–covered SNF stays to receive higher Medicare SNF payments. Because of this requirement, only beneficiaries who are sick enough to be hospitalized can receive coverage for more intensive SNF care. SNFs are also required to have a medical director who oversees operations and the quality of care provided. Patients in SNFs are required to have a physician visit within the first 30 days of a beneficiary's admission and 1 visit every subsequent 60 days.

SNFs must provide 24-hour nursing services by a licensed nurse and have a registered nurse working in the facility for at least 8 consecutive hours a day. In 2016, CMS

**TABLE
9-14**

Selected federal regulatory requirements for staffing and services, by PAC setting (continued next page)

Staffing/ services	LTCHs	IRFs	SNFs	HHAs
Physician services	<p>A physician must supervise medical care of each patient. Physician conducts daily examination of patient.</p> <p>A physician must be on duty or on call at all times.</p>	<p>A physician must supervise medical care of each patient. Patient is examined by a physician three times a week.</p> <p>A physician must be on duty or on call at all times.</p> <p>The facility must have a physician serving as director of rehabilitation on a full-time basis (part time in rehabilitation units).</p> <p>A physician must establish, review, and revise as needed a plan of treatment for each patient.</p> <p>Patients must have at least 3 face-to-face visits per week by a physician.</p>	<p>A physician must supervise medical care of each patient.</p> <p>The facility must provide or arrange for the provision of physician services 24 hours a day, in case of an emergency.</p> <p>Patients must be seen by a physician at least once in the 30 days after admission and at least once every subsequent 60 days.</p>	<p>A physician must establish, review, and revise the plan of treatment for each patient.</p> <p>Medicare requires a face-to-face visit by a physician or nurse practitioner in the 90 days before or 30 days after the initiation of home health care.</p>
Nursing services	<p>The facility must provide 24-hour nursing services furnished or supervised by a registered nurse.*</p>	<p>The facility must provide 24-hour nursing services furnished or supervised by a registered nurse.*</p>	<p>The facility must provide 24-hour nursing services by a licensed practical nurse and must use the services of a registered nurse for at least 8 consecutive hours a day, 7 days a week.</p>	<p>A registered nurse must make the initial evaluation visit, regularly reevaluate the patient's nursing needs, initiate the plan of care and necessary revisions, and furnish those services requiring specialized nursing skill. Other nursing services may be furnished by a licensed practical nurse.</p>

Note: PAC (post-acute care), LTCH (long-term care hospital), IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), HHA (home health agency), N/A (not applicable).
*Except for rural hospitals that have a 24-hour-nursing waiver.

Source: Linehan 2017.

revisited its staffing requirements for nursing homes but declined to impose a requirement for a specific number of staff or hours of nursing care per resident (Centers for Medicare & Medicaid Services 2016). Instead, CMS opted for a “competency-based” staffing approach. In addition to having sufficient staff to provide nursing care to each resident in accordance with his or her care plan and individual needs, each facility also must ensure that

the staff has the appropriate competencies and skill sets to assure resident safety. Each facility is required to determine what constitutes sufficient staffing—both the number and necessary competencies and skill sets—for the facility given the number, acuity, and diagnoses of its residents.

When needed by a beneficiary and under the written order of a physician, SNFs must provide physical therapy

**TABLE
9-14**

Selected federal regulatory requirements for staffing and services, by PAC setting (continued)

Staffing/ services	LTCHs	IRFs	SNFs	HHAs
Physical/ occupational therapy	Services must be provided by qualified physical therapists, physical therapist assistants, occupational therapists, and occupational therapy assistants.	Services must be provided by qualified physical therapists, physical therapist assistants, occupational therapists, and occupational therapy assistants. The facility must use a coordinated interdisciplinary team approach in the rehabilitation of each inpatient, with team conferences held at least once a week to determine appropriateness of treatment.	If needed and under the written order of a physician, services must be provided by qualified personnel.	Any services must be provided by a qualified therapist or by a qualified therapy assistant under the supervision of a qualified therapist.
Respiratory care services	If such services are provided, the facility must have a director of respiratory care who is a physician and who serves on a full- or part-time basis.	If such services are provided, the facility must have a director of respiratory care who is a physician and who serves on a full- or part-time basis.	If needed, services must be provided under the written order of a physician by qualified personnel.	N/A
Pharmacy services	The facility must have a pharmacy directed by a registered pharmacist or a drug storage area under competent supervision. A full-time, part-time, or consulting pharmacist must be responsible for developing, supervising, and coordinating all the activities of the pharmacy services.	The facility must have a pharmacy directed by a registered pharmacist or a drug storage area under competent supervision. A full-time, part-time, or consulting pharmacist must be responsible for developing, supervising, and coordinating all the activities of the pharmacy services.	The facility must provide or obtain routine and emergency drugs and biologics needed by patients. The facility may permit unlicensed personnel to administer drugs if state law permits, but only under the general supervision of a licensed nurse. The facility must employ or obtain the services of a licensed pharmacist.	N/A

Note: PAC (post-acute care), LTCH (long-term care hospital), IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), HHA (home health agency), N/A (not applicable).
*Except for rural hospitals that have a 24-hour-nursing waiver.

Source: Linehan 2017.

and occupational therapy by qualified personnel. SNFs are permitted to provide therapy to beneficiaries on an individual, concurrent (two or more beneficiaries working with a therapist on different therapeutic activities), or group basis (group therapy involves a therapist instructing

a group of beneficiaries on a single activity). CMS has always wanted individual therapy to represent the majority of therapy services, and it recently tightened limits on the amount of group or concurrent therapy a beneficiary can receive.³¹

Major HHA requirements Medicare beneficiaries must have a need for skilled care—either nursing or rehabilitation services—and be homebound to receive home health benefits. Home health care requires that nursing care be delivered by a registered nurse (RN) or a licensed practical nurse under the supervision of an RN. An RN or physical therapist must make the initial evaluation visit, initiate the plan of care, and regularly reevaluate beneficiary needs. There is no 24-hour or after-hours coverage requirement for home health services, but some HHAs provide these services.

Medicare regulation requires that home health care be provided under the supervision of a physician, who is also responsible for determining the need, length, and mix of services for home health care. Medicare requires a face-to-face visit with the ordering physician, which can occur up to 90 days before or 30 days after the initiation of home health care. However, there is no requirement for a physician in-home visit during a home health episode. Many beneficiaries have an office visit with a physician during their home health stay, though it is not required by Medicare.³² HHAs are permitted to have medical directors, but it is not a requirement.

Definitions of IRFs and LTCHs evolved from the need to distinguish PAC settings from acute care hospitals

The definitions and payment categories for IRFs and LTCHs were established because of the development and implementation of the inpatient PPS (IPPS) in 1983. Hospitals with very long average lengths of stay and those that served primarily patients needing intensive inpatient rehabilitation were excluded from the IPPS because their patient costs could not be accurately predicted by the IPPS patient classification system and weights. For almost two decades, IRFs and LTCHs continued to be paid under cost-based reimbursement systems but eventually transitioned to their own PPSs.³³

Major requirements for IRFs To receive payment under the IRF PPS, a provider must satisfy a compliance threshold known as the “60 percent rule.” This rule requires that no less than 60 percent of a facility’s patients (Medicare and other) have as a primary diagnosis or comorbidity at least 1 of 13 conditions and require intensive inpatient rehabilitation.³⁴ IRFs are licensed as hospitals and are required to meet the Medicare COPs for inpatient hospitals.

Medicare’s coverage criteria also require that beneficiaries admitted to IRFs need active and ongoing therapy in at least two modalities, one of which must be physical or occupational therapy. Beneficiaries must also need and be reasonably expected to actively participate in intensive therapy—generally interpreted as at least 3 hours of therapy a day or 15 hours a week. This requirement is intended to ensure that beneficiaries admitted to IRFs can tolerate and benefit from the intensive level of therapy that IRFs are presumed to provide (and for which Medicare pays). IRFs can provide therapy to beneficiaries on an individual, concurrent (two beneficiaries working with a therapist), or group basis (group therapy involves a therapist instructing a group of beneficiaries). There has been concern that group therapy and concurrent therapy are less appropriate in IRFs because the nature of intensive rehabilitation would suggest that the use of individual therapy would be warranted, and CMS has indicated that those other modalities should be used on a limited basis.

IRF nursing requirements are governed by the inpatient hospital COPs, which require 24-hour nursing services supervised by an RN. Patients in IRFs are required to receive three physician visits a week, and IRFs are required to have a physician medical director with rehabilitation expertise who oversees the care provided in these facilities.

Major requirements for LTCHs To qualify as an LTCH for Medicare payment, a facility must meet Medicare’s conditions of participation for acute care hospitals and, for certain Medicare patients, have an average length of stay of greater than 25 days. In FY 2016, CMS began phasing in a payment change for LTCH cases that do not meet certain criteria specified in the Pathway for SGR Reform Act of 2013. Under this new dual payment-rate structure, Medicare cases are paid the standard LTCH PPS rate if the patient had an immediately preceding acute inpatient hospital stay that included 3 or more days in an intensive care unit, or if the patient received mechanical ventilation services for at least 96 hours in the LTCH. These cases are reimbursed under the LTCH PPS and are used to determine that a facility’s average length of stay meets the 25-day minimum requirement. LTCH cases not meeting that specified criteria receive a “site-neutral” rate based on the lesser of an IPPS-comparable amount or 100 percent of the cost of the case. Beginning in FY 2020, at least half of an LTCH’s

cases must meet the criteria to continue to be paid the standard LTCH PPS rate for eligible cases.

Beginning in FY 2016, LTCHs receive a full payment under this setting's PPS only for Medicare patients who meet certain criteria.³⁵ The so-called "site-neutral" policy requires that a patient have a prior acute care hospitalization that includes at least 3 days in an intensive care unit or that the beneficiary receive at least 96 hours of mechanical ventilation in the LTCH. Cases that meet these criteria are paid under the LTCH PPS, while those that do not meet the criteria receive a lower payment based on the IPPS. Only Medicare's FFS patients who meet these criteria are included in the calculation of a facility's average length of stay. LTCHs are licensed as hospitals.

Patients are required to receive daily physician visits for treatment or care management, and LTCHs must have a leader of the medical staff who oversees the facility's operations and organization of the clinical workforce—effectively, a physician medical director. A physician must be on duty or on call at all times. LTCHs are required to provide 24-hour RN services. These clinical staffing and supervision requirements are intended to make the medical capabilities of LTCHs proportionate to the expected level of severity of these cases.

Many program requirements are similar across PAC settings

Program requirements for many areas, such as governance, emergency preparedness, patient rights, infection control, and quality assurance programs have similar purposes or requirements across PAC settings. In some cases, such as policies requiring compliance with applicable federal, state, and local laws, the responsibilities of the four settings are identical. The definition and licensure of physical therapists, occupational therapists, and speech-language pathologists and the nursing requirements are generally similar across the four settings.

In some instances, the requirements create similar basic responsibilities but differ in specific requirements. For example, the infection control COPs require all sectors to have a systematic approach to infection control, but the SNF requirements are more specific than the requirements for other PAC sectors. Requirements for provider governance constitute another area in which the requirements are similar, and harmonization is likely possible. When requirements in one setting are more

rigorous than similar requirements in other settings, Medicare could consider applying the requirement to a cross-setting PPS.

Some program requirements differ across PAC settings

Some requirements differ significantly across the settings and could require significant development efforts under a unified system. The most critical of these pertain to physician supervision and nurse staffing as well as ancillary needs, such as pharmacy services. For example, physicians are required to visit LTCHs daily and IRF patients three times a week; in contrast, a SNF beneficiary needs a visit after 30 days. Beneficiaries receiving home health care are not required to visit with a physician during the home health episode.³⁶ Home health care does not have certain requirements because the services covered under the benefit are more restrictive than in the institutional setting. For example, the home health care benefit does not cover prescription drugs, so there are no HHA requirements for pharmacy services. In addition, HHAs do not have requirements for condition of facilities or dietary services because HHAs do not operate residential facilities or provide room and board.

An approach to aligning requirements for PAC providers

With the implementation of a unified PAC PPS, Medicare could establish new patient-centered definitions of PAC providers that link program requirements to the types of patients a provider opts to treat. New COPs for a PAC provider could establish two tiers of requirements. Basic, or first-tier, criteria would apply to all PAC providers, while a second tier would apply to providers opting to offer specialized services to treat patients with more complex care needs. Certain requirements would be different for institutional care and home health care since providing care in a beneficiary's home differs from providing care in an inpatient setting. The new requirements should not necessarily be based on the least restrictive or least burdensome requirement for the existing settings. Rather, the requirements should be based on the minimum conditions needed to ensure patient safety. Medicare follows a similar tiered approach for suppliers of durable medical equipment (DME). A general set of requirements applies to all DME suppliers that participate in Medicare, while there are separate requirements for suppliers that offer more sophisticated DME products, such as respiratory devices, manual and power wheelchairs, and orthotic and prosthetic devices.

A new regulatory approach for PAC providers could follow a similar approach. The first tier would establish the basic competencies necessary to treat the majority of PAC patients. This tier would establish requirements for services that most moderate to less severely disabled or impaired patients receive, such as the level of nursing, rehabilitation therapy, physician supervision, and other frequently furnished services. Providers meeting the first-tier requirements could serve any PAC patient who does not have a specialized care need, as delineated by the second tier.

A second tier would establish condition-specific requirements for providers opting to treat patients with specialized or very high care needs, such as patients with clinical conditions that require ventilator support, high-cost drugs, high-cost wound care, or dialysis and patients with spinal cord or traumatic brain injuries. This approach shifts COPs from setting-specific requirements to patient-focused requirements specific to each special care need. A single set of requirements would apply to all providers opting to treat a special condition or care need. A provider opting to treat multiple complex conditions or special care needs would be required to meet each set of condition-specific requirements. Such an approach would be akin to licensing by service line. Medicare would periodically need to update the conditions assigned to the second tier to reflect changes in medical practice.

Tier 1: Core requirements for all PAC providers

The first tier would establish the core clinical services for patients who do not require specialized care. This tier's requirements would define the levels of physician supervision and nursing services and the rehabilitation services required by the most common conditions treated in PAC, such as patients with pneumonia or urinary or kidney infections or patients recovering from hip and knee surgeries. The Tier 1 requirements would delineate the licensure requirements and professional qualifications of nurses, aides, and therapists.

This tier would also establish common operational requirements that would not differ significantly across institutional or home settings, such as requiring patient assessment and specifying patient rights, leadership and administrative responsibilities, emergency preparedness, training, quality assurance, compliance and ethics, and infection control programs.

There would be a common set of requirements for institutional PAC providers that are not relevant to home

health care. These requirements would address the condition of facilities and services commonly provided in institutional settings, such as dietary, laboratory, and pharmacy services.

Physician requirements A key component of the Tier 1 requirements would be for a physician medical director. All institutional PAC providers are currently required to have some form of clinical leader or medical director. Policymakers would have to determine whether this requirement should continue for institutional providers and whether it should be extended to HHAs. The requirement could also set a cap on the number of separate facilities or agencies a medical director could oversee as a way to ensure more meaningful involvement with the care of each provider.

Medicare would also have to determine the intensity or frequency of physician involvement that it considers appropriate for patients in PAC settings. Because the first-tier requirements would not address the more specialized care needs associated with the second tier of requirements, it might be appropriate to require a regular visit, such as weekly, to assess the status of care. This requirement would be more frequent than the current SNF standard but less frequent than the physician visits in the IRF and LTCH settings. Establishing a requirement for an examination by a doctor during a home health episode would be a new requirement, but closer clinical management could also benefit patients.

Nursing service requirements The current PAC settings generally use similar definitions for the licensure and roles of nurses but have significant differences in staffing levels. Policymakers would need to decide on the required level of nursing presence. Studies in the health services literature have found a positive correlation between RN staffing and quality of care in nursing homes, although other studies have found no relationship between staffing and quality or have found mixed results (Castle 2008, Harrington et al. 2016). Some evidence suggests that hours of nursing care must exceed a minimum number before a positive correlation between staffing levels and quality can be observed (Harrington et al. 2016). In addition, there is some literature recognizing that the skill mix of the nursing staff also matters (Bowblis 2011). Staff need to have requisite qualifications and professional competencies for the care they provide. Policymakers should consider requiring a minimum standard of RN coverage, such as 24 hours a day, 7 days a week, for institutional PAC providers. Round-the-clock coverage

is likely to reduce adverse events such as preventable hospitalizations. Higher minimums could be established for providers that treat patients requiring special care (considered in the Tier 2 requirements). To align requirements, HHAs could be required to provide 24-hour access to an RN by telephone.

In response to a proposed rule, CMS received many comments urging the agency to require an RN to be in every long-term care facility 24 hours a day, 7 days a week (Centers for Medicare & Medicaid Services 2016). However, the agency was concerned that establishing a staff-time threshold could result in unintended consequences, such as staffing to the minimum, reducing other staffing not covered by any requirement, and task substitution (shifting work from staff not subject to the staff-time threshold to staff that are). CMS was also concerned about stifling the development of innovative care options, particularly smaller, more home-like settings. In addition, CMS worried that geographic disparity in the supply of RNs could make it challenging for some providers in rural and underserved areas to meet a mandate for the continuous presence of an RN. A new standard would have to include some flexibility for circumstances that could limit a provider's ability to have 24-hour RN presence, such as allowing on-call RNs or telehealth for care after hours or for low-volume providers or providers located in remote areas.

Our review of nursing home employment data suggests that increasing the requirement to 24 hours a day, 7 days a week would be a significant change. Payroll data indicate that virtually all nursing homes had an RN on duty for at least 8 hours a day for 360 days of the 2017 calendar year. However, the average number of nursing (including RNs and licensed practical nurses) hours per patient varied widely across facilities.³⁷ For example, in 2017 the nursing home at the 25th percentile provided 32 minutes per resident day, while the nursing home at the 75th percentile provided 90 minutes of nursing per resident day. The variation could reflect differences across facilities in patient needs but could also indicate that nursing homes differ in the clinical services and level of nursing service they offer. Under a unified PPS, some facilities that sought to serve patients with higher care needs would have to increase the amount of nursing services they provide.

The Secretary would also need a way to ensure that providers comply with any staffing requirement. For many years, CMS used self-reported data from nursing homes to measure staffing levels in these facilities. In

2016, CMS implemented a statutory requirement that nursing homes report payroll staffing data that would permit more accurate measurement of staffing levels. A follow-up analysis found that 7 in 10 nursing homes had, on average, 12 percent lower staffing levels in the payroll-based data than in the self-reported data (Rau 2018). The analysis also noted that nursing homes with lower staffing (when measured using the payroll data) tended to have more health code violations. Under a revised set of requirements for PAC providers, Medicare could consider requiring providers subject to a staffing requirement to submit payroll-based data, as is now required of nursing homes. The Secretary could then consider these data in its quality ratings of providers (as is currently done in the star ratings of nursing homes) or impose monetary penalties on providers not meeting the staffing COPs.

Defining rehabilitation services Many PAC users require rehabilitation services, so a relatively high level of service should be available to patients before referral to more specialized providers. Staffing requirements should address physical therapists, occupational therapists, and speech–language pathologists and the supervision of aides. Similar to existing requirements, facilities could be required to have the skill mix and staffing level appropriate for the patients they serve.

Medicare allows institutional settings to provide therapy on an individual, concurrent, or group basis. Though the use of concurrent or group therapy can improve efficiency, it can also reduce quality of care when patients require the intensity or attention of individual therapy. Under the revised requirements for a unified PAC PPS, Medicare could establish limits on the mix of individual, group, and concurrent therapy minutes a patient receives and set a cap on the number of patients who can be treated at the same time.

Tier 2: Additional requirements for providers opting to treat patients who require specialized care

The second tier of requirements would define the capabilities expected of a PAC provider opting to treat patients with specialized care needs. Medicare would identify categories of patients with conditions or treatments that require higher levels of staffing, clinical expertise, or ancillary services. Several criteria could be used to identify these categories, such as reviewing current trends in specialized PAC care, expert panel reviews, and clinical markers such as conditions associated with significantly higher hospitalization risk. Establishing

unique requirements for different clinical conditions could also improve discharge planning for patients with specialized needs because it would be easier to identify PAC facilities that offer services related to a particular condition. Specialized facilities may not be as broadly available as PAC providers meeting Tier 1 requirements, and beneficiaries with these care needs may have to travel farther from home to receive appropriate care. However, these requirements would protect beneficiaries from receiving substandard care in facilities that lack appropriate capabilities.

In establishing these categories, Medicare would have to consider the extent to which existing utilization patterns should be used for identifying the need for specialized care, whether the category can be manipulated by providers, and whether to rely on definitions developed by technical expert panels or other consensus processes. For example, if patients who require unusually high rehabilitation therapy requirements are included in the Tier 2 conditions, the definition should be clinically based rather than based on current practice patterns. Given the financial incentives of the current HHA and SNF PPSs to furnish therapy, high utilization patterns may not reflect patient need.

Possible categories for specialized requirements are described below.

- Chronically critically ill (CCI) patients: Ensuring adequate posthospital care for patients with severe medical conditions is an important function of PAC. A clinical category defining CCI patients could rely on the length of their intensive care unit (ICU) stay since much of the literature suggests that a prior ICU stay is an important signifier of CCI status (Carson 2012, Wienczek and Winkelman 2010). The Commission's analysis of CCI patients concluded that patients with eight days in an ICU were more likely to have the types of conditions clinicians considered appropriate for LTCHs, and we recommended this standard in our March 2014 report to the Congress (Medicare Payment Advisory Commission 2014). Facilities that seek to serve these patients could be required to have additional nursing staff, provide daily physician examination, deliver respiratory care when needed, and have—on-site or under arrangement—the ancillary, laboratory, and pharmacy services typically required by CCI patients.
- Patients who require prolonged ventilator service or specialized respiratory care: Patients who need these

treatments require specialized staff with expertise in managing ventilator-dependent patients (including ventilator and tracheostomy care) and experience successfully weaning patients off this care when possible. These patients may require specialized equipment, including ventilator services, tracheostomy services, and continuous positive airflow pressure. Some states have established special requirements for providers that serve ventilator patients (New Jersey Department of Health and Senior Services 2004, State of New York 2018). For example, the District of Columbia requires that staff have clinical competency in cardiopulmonary care and ventilator operation (District of Columbia 2019). The regulations require that a doctor with specialized training and experience in treating ventilator patients supervise care and that the staffing levels and staff clinical competencies be sufficient for the severity of patients receiving ventilator care.

- Patients with serious infections and patients who are receiving chemotherapy: This group would include patients with septicemia or other infections that have proven difficult to control and oncology patients receiving chemotherapy. These patients may require considerable physician and nursing oversight, and staff should be trained to identify symptoms of adverse drug reactions or ineffective treatment. These providers would also require readily available pharmacy services.
- Patients who require intensive rehabilitation: The intent of a specialized category would be to identify patients with very complex or specialized rehabilitation needs well beyond those that would be available in the first tier of requirements. Patients who require this level of intensive rehabilitation would include patients with severe limitations due to severe stroke, complex joint replacement (such as patients recovering from bilateral joint replacement who are obese), brain and spinal cord injury, and major joint trauma. The rehabilitation care for these patients would often include multiple therapy disciplines (physical therapy, occupational therapy, and speech–language pathology services). The expectation would be that these patients would receive the majority of their therapy services in one-on-one care, not in group or concurrent therapy. The requirements could also specify that providers offer the appropriate laboratory and pharmacy services for patients typically requiring this level of rehabilitation.

- Patients who require dialysis for end-stage renal disease (ESRD): Ensuring quality care for beneficiaries receiving dialysis requires specialized staff and equipment not commonly found at PAC facilities. Medicare has established conditions for coverage (CFCs) for outpatient dialysis facilities that indicate the capabilities expected of these facilities (42 Code of Federal Regulations §494). For example, the CFCs establish that facilities should have an interdisciplinary team to treat ESRD patients. The infection control program should, in addition to standard precautions, include efforts to address infections specific to patients with ESRD. The CFCs also set standards for maintaining clean water, dialysate, and hemodialyzers. These standards could be modified to establish standards for PAC providers that provide dialysis.

Policymakers would have to consider any incentive created by having separate requirements for different clinical groups. PAC providers could avoid specialized requirements by changing their diagnostic coding practices. PAC providers have changed their coding practices in response to past changes in payment policy. For example, in 2008, CMS implemented a new case-mix system that increased payments to HHAs for patients with hypertension, and in this first year, the reported rate of unspecified hypertension increased by 12 percentage points.

Maintaining and aligning coverage requirements

Policymakers will also have to consider Medicare’s policies intended to ensure appropriate use of PAC, such as the three-day-stay requirement for SNFs and the homebound requirement for home health care. These requirements are intended to help ensure that the care is medically necessary, which will be equally important under a unified PAC PPS. Revisions to providers’ requirements should not lower the standards for receiving PAC; otherwise, program spending could increase for care of questionable value.

The three-day prior hospital stay is a unique requirement for SNFs that would need to be aligned (at a minimum) with the requirements for other institutional PAC care. Requiring all patients to have a prior hospital stay to receive institutional PAC would tighten safeguards for appropriate use but would eliminate Medicare coverage for beneficiaries without a prior hospital stay. Fewer

than 15 percent of the beneficiaries admitted to IRFs and LTCHs have no prior hospital stay. Access for these beneficiaries could be addressed by establishing exceptions to the requirements for the prior hospital stay if a patient’s conditions suggested the need for institutional PAC. For example, the requirement could be waived for patients with care needs identified in the second tier of requirements.

ACOs, MA plans, or other reform policies that place providers at risk for the efficient delivery of care could also be an exception. Because ACOs are at financial risk for their assigned beneficiaries, current regulations permit them to waive the three-day-stay requirement for SNFs, though there are minimum quality standards that a SNF has to meet to receive patients under this waiver. A revised three-day-stay requirement for institutional PAC could also permit up to two observation days to count toward satisfying the three-day-stay requirement, as the Commission previously recommended for the existing requirement for SNF care (Medicare Payment Advisory Commission 2015).

The homebound requirement is unique to home health care, and continuing this requirement for noninstitutional PAC would help ensure that only patients who have difficulty accessing ambulatory care in the community are served in the home. As the Commission has noted in its reports, ensuring the appropriate use of home health care is challenging, and there is significant geographic variation in the use of this service (Medicare Payment Advisory Commission 2018c). This variation and the recurring fraud, waste, and abuse issues arising from this benefit suggest that fewer safeguards would be imprudent.

Implementation of aligned regulatory requirements

The alignment of regulatory requirements across PAC settings is a large undertaking and could take years to complete. The Commission appreciates the scope of the efforts that will be required both by CMS and stakeholders. The time line for implementation could be incremental, with changes phased in gradually over time, or the revised requirements could be implemented at once. The key difference between the two options is how much of the alignment needs to be completed before the PAC PPS is implemented. The incremental approach would allow the program to begin implementing some of the regulations sooner, for example, where the current differences in setting-specific regulations are not large and

the cost to a provider for aligned regulations would not be high. Requiring that the program resolve all of the cross-setting regulatory issues before implementing any changes could delay the implementation of a PAC PPS. At the same time, a unified PPS will affect many providers' payments, so alignment of those regulations that substantially affect a provider's costs will need to be completed before the PPS is in place.

An initial set of revisions could implement common requirements for all providers to meet that address areas where the existing requirements do not differ substantially across the four settings and would be relatively more simple to align. This initial set could include requirements for patient assessment, licensure of staff, governance, patients' rights, infection control (for institutional PAC providers), quality assurance, and emergency preparedness. The first set of requirements could also consider eliminating setting-specific requirements that would no longer make sense under a unified PPS, such as the 60 percent rule and intensive therapy requirements for IRFs and the requirement of a 25-day stay for qualifying stays in LTCHs.

A second set of requirements could be implemented at a later date to address the areas that will be more difficult to align, such as clinical staffing levels and physician presence. This later set could also include the requirements specific to each special care need included in Tier 2. Some of these requirements could raise the operating costs for some providers. For example, if all institutional PAC providers are required to have an RN on site 24 hours every day, the costs for SNFs will increase.

In addition to federal regulatory requirements, PAC providers must meet licensure, certificate-of-need, or other regulations imposed by the states in which they are located. Some state requirements are more stringent than federal ones. For example, PAC providers in states with mandated staffing ratios (such as California) must meet those requirements. Since many states have their own requirements for licensure and operations, providers will have to meet separate state and federal requirements, just as they do now. Providers required to meet more restrictive state regulations may have less flexibility than providers in other states to adapt to a unified PAC PPS (Linehan 2017). ■

Endnotes

- 1 CMS eliminated the downside risk in the first five quarters for all participants because of concerns about the accuracy of the target prices. CMS later eliminated downside risk for physician group practice episodes because of episode attribution errors (Dummit et al. 2018).
- 2 Across the 67 model-participant clinical episode combinations analyzed, Medicare payments per episode declined for 50, and the change was statistically significant for 27.
- 3 Beneficiaries would retain their freedom of choice of PAC provider, including whether to remain or be transferred to a different provider.
- 4 In this work, we simplified our estimates of routine costs per stay and made minor refinements to some of the risk factors. The following factors were used to predict the cost of stays: the patient's age, disability status, comorbidities (and the number of body systems involved), severity of illness, Medicare Advantage risk score, cognitive status, and impairments; the primary reason to treat; the length of stay in an intensive care unit during the prior hospital stay (if any); and the use of select high-cost services (such as dialysis and mechanical ventilation). The model included an adjustment for stays provided by HHAs because of their much lower costs and two outlier policies—one for unusually high-cost stays and another for unusually short stays. Stays that were part of PAC episodes that began between January 1, 2017, and June 30, 2017, were included in the analysis.
- 5 Beginning in fiscal year 2016, CMS eliminated some of the diagnosis codes from the list that can be used to determine whether cases qualify for the compliance threshold that at least 60 percent of all patients admitted to an IRF have as a primary diagnosis or comorbidity at least 1 of 13 conditions. In 2017, CMS began phasing in a dual payment-rate structure for LTCHs that lowered payment rates for cases that do not meet the LTCH criteria specified in the Pathway for SGR Reform of 2013.
- 6 The predictive model explained 52 percent of the differences in costs across stays, though this measure of accuracy is not very meaningful since much of its power came from the indicator for the home health setting.
- 7 We considered defining an episode using a fixed period of time, such as 30 days, which would limit the underpayments and overpayments. However, like a stay-based design, this definition of an episode would be likely to create volume incentives to extend PAC to qualify for an additional episode.
- 8 The intensity of the setting is based on the following hierarchy: LTCHs were considered the most intensive, followed by IRFs, then SNFs, and home health care as the least intensive.
- 9 The predictive model explained 55 percent of the differences in costs across stays, which is not a very meaningful measure given that much of its power comes from the indicator for the home health setting.
- 10 The PCR for a stay-based design that included only single and pairs of stays was 1.12.
- 11 Short single stays would likely be paid under a short-stay outlier policy that bases payments on cost per day or per visit. Therefore, excluding these stays from the analysis would not affect the comparison of stay-based and episode-based payments.
- 12 Current billing rules establish definitions of stays. In a home health stay, an intervening hospital or institutional PAC stay that occurs entirely during a home health care stay does not change the counting of the 60 days that define a home health stay and does not establish separate stays for the care before and after the intervening stay. For SNF stays, an intervening hospital or PAC stay establishes separate SNF stays, one before the intervening event and another after. In IRFs, the duration of the interruption (for a hospital or PAC stay) and whether the beneficiary returns to the same facility establishes whether the original IRF stay continues after the intervention. If the intervening event is three days or less and the beneficiary returns to the same facility, the original IRF stay continues. If the intervening event is longer than three days or the beneficiary goes to a different facility after the intervening event, there are two IRF stays—one before the event and another after the event. In LTCHs, the duration of the interruption and whether the beneficiary returns to the same LTCH define whether a separate stay is established. An LTCH stay is counted as one if the intervening stay is in an acute hospital and shorter than 10 days, in an IRF and is shorter than 28 days, or in a SNF and is shorter than 46 days. If the intervening stay is longer than the above limits or if the beneficiary is transferred to a different LTCH, there are two LTCH stays.
- 13 Severe wound care includes patients with a nonhealing surgical wound, a wound for a patient who is morbidly obese, a fistula, or a Stage III, Stage IV, or unstageable pressure wound.

- 14 In home health care, the stay is a 60-day episode. In 2020, the home health PPS will change the unit of service to a 30-day episode.
- 15 PAC providers are required to complete patient assessments on FFS Medicare and Medicare Advantage beneficiaries. However, where relevant, FFS payments and quality measures reflect only assessments from FFS beneficiaries.
- 16 The uniform assessment items are based on items developed as a part of CMS's PAC Payment Reform Demonstration (PAC-PRD). The PAC-PRD evaluators concluded that the items' interrater reliability results showed very good agreement on most items and that the items could be used to measure a patient's progress in a standardized way across an episode of care that involved providers in different settings (Gage et al. 2012). Their reliability testing compared assessments done on the same patient by different assessors within the same setting, in different settings, and from different disciplines (e.g., physical therapy or occupational therapy).
- 17 If providers fail to submit the required quality data, they receive a 2 percentage point reduction to their annual payment update.
- 18 The 9 therapy payment groups use the following thresholds: 0 to 5 visits, 6 visits, 7 to 9 visits, 10 visits, 11 to 13 visits, 14 to 15 visits, 16 to 17 visits, 18 to 19 visits, and 20 or more visits.
- 19 Short stays are defined as having a length of stay less than or equal to five-sixths of the geometric mean length of stay for the case type.
- 20 Beginning in FY 2018, CMS adopted a policy that better aligns payments for short stays with their costs (by paying a rate equal to an amount that is a blend of the inpatient PPS amount for the Medicare severity–diagnosis related group and 120 percent of the LTCH per diem payment amount up to the full LTCH PPS standard federal payment rate).
- 21 For home health, clinicians cannot observe the patient doing every activity during a visit, so there is more reliance on observing simulations of certain activities and relying on self-report from the patient or his or her caregiver. In contrast, in institutional PAC, the patients perform most daily activities most days, and observation of the activity is more feasible.
- 22 These uniform items are often called the “GG items,” referring to Section GG of the assessment tool.
- 23 The Barthel index is an ordinal scale used to measure performance in multiple activities of daily living. A patient's performance on each item is rated on this scale, with a given number of points assigned to each level. Within each domain, there are three or four levels.
- 24 Because HHAs are not required to assess function when patients are discharged to SNFs, IRFs, or LTCHs, we did not include these transfers in our analysis of sequential assessments.
- 25 We also analyzed the discharge to admission assessments by ownership and found some small differences. For example, 71 percent of discharge assessments conducted by for-profit IRFs were assessed two or more levels lower when admitted to for-profit HHAs, compared with 66 percent for all IRF to HHA stays.
- 26 HHAs did not collect this information until January 1, 2019.
- 27 There were small differences by ownership, with for-profit providers having a larger share of assessments with function rates two or more levels lower than the preceding discharge assessment. We also compared the discharge and admission assessment for individual domains of function, and the trends were relatively consistent. Walking was the most consistently assessed domain, which makes sense because the inability to walk, which characterizes a fair share of SNF and LTCH patients, is unambiguous.
- 28 COPs (referred to as requirements of participation in long-term care facilities and skilled nursing facilities) are regulations that must be met to participate in the Medicare program. These regulations address a wide variety of domains, including services and staffing, care planning, administration, quality and safety, and patients' rights. Failure to comply with COPs can result in sanctions, fines, or—in relatively rare cases—exclusion from the Medicare program. COP requirements must be met to receive a payment from Medicare. Failure to comply can result in denial of a claim for payment (or, if payment has already been made, in a demand for any overpayment to be refunded to the federal government). A claim can be eligible for payment even if the provider is out of compliance with one or more COPs as long as the conditions of payment are met at the time the claim is submitted.
- 29 The Short Form Health Survey was developed for the Medical Outcomes Study, a multiyear study of patients with chronic conditions. The resulting short-form survey instrument provides a solution to the problems faced by many investigators who must restrict survey length. The instrument was designed to reduce respondent burden while achieving minimum standards of precision for purposes of group comparisons involving multiple health domains.

- 30 The three-day inpatient hospital stay requirement for coverage of SNF care is specified in statute. In June 2015, the Commission recommended that the Congress review the requirement to allow for up to two outpatient observation days to count toward meeting the criteria (Medicare Payment Advisory Commission 2015).
- 31 The FY 2019 SNF PPS payment rule finalized a requirement that no more than 25 percent of a beneficiary’s therapy may be furnished in a group or concurrently. In concurrent therapy, two patients are engaged in different therapy activities at the same time. In group therapy, multiple patients are engaged in the same therapy activity at the same time. The previous rule set separate limits for group and concurrent therapy.
- 32 The homebound requirement for home health care allows exceptions for medical visits, religious services, and infrequent personal errands or social events.
- 33 The Balanced Budget Act of 1997 required the establishment of PPSs for all four PAC settings. All IRFs had to be paid under a PPS by September 1, 2002, and cost-based reimbursement for LTCHs ended September 1, 2003.
- 34 The Secretary has the authority to define inpatient rehabilitation facilities, including a compliance rate (although by law, if CMS applies a compliance threshold, it cannot be higher than 60 percent). The Secretary has specified that the 13 conditions that count toward the 60 percent rule are stroke; spinal cord injury; congenital deformity; amputation of a lower limb; major multiple trauma; hip fracture; brain injury; certain other neurological conditions, such as multiple sclerosis, Parkinson’s disease, and neuromuscular disorders; burns; three arthritis conditions for which appropriate, aggressive, and sustained outpatient therapy has failed; and hip or knee replacement when it is bilateral, the patient’s body mass index is at least 50, or the patient is age 85 or older. If an IRF does not meet the compliance threshold, Medicare pays for all its cases based on the acute care hospital prospective payment system rather than the IRF prospective payment system.
- 35 The requirement that LTCHs maintain an average length of stay of 25 days or greater is specified in statute. Beginning in FY 2016, LTCHs must maintain an average length of stay of 25 days or greater only for certain Medicare cases. For FY 2016 and beyond, LTCHs receive higher LTCH payment rates only for beneficiaries who had an acute care hospital stay immediately preceding the LTCH admission, if the acute care stay included at least three days in an intensive care unit or if the patient requires prolonged ventilator services. All other LTCH discharges—including any discharges assigned to psychiatric or rehabilitation Medicare severity long-term care diagnosis related groups, regardless of intensive care unit use—are paid a “site-neutral rate,” an amount based on Medicare’s inpatient hospital prospective payment system or 100 percent of the costs of the case, whichever is lower. Cases paid a site-neutral rate are excluded from the calculation of the LTCH’s average length of stay. Beginning in FY 2020, an LTCH must have no more than 50 percent of its cases paid at the site-neutral rate to receive the LTCH prospective payment system rate for eligible cases.
- 36 Beneficiaries are required to have a “face-to-face” examination with the physician ordering home health care, but this visit can take place in the 90 days before or up to 30 days after the initiation of care.
- 37 These statistics include services provided by RNs and licensed practical nurses and are for all patients (i.e., those covered by Medicare, Medicaid, and other insurers). On average, about two-thirds of the nursing time is provided by licensed practical nurses.

References

- Barnett, M., A. Wilcock, J. M. McWilliams, et al. 2019. Two-year evaluation of mandatory bundled payments for joint replacement. *New England Journal of Medicine* 380, no. 3 (January 17): 252–262.
- Baumhauer, J. F. 2017. Patient-reported outcomes: Are they living up to their potential? *New England Journal of Medicine* 377, no. 1 (July 6): 6–9.
- Bowblis, J. R. 2011. Staffing ratios and quality: An analysis of minimum direct care staffing requirements for nursing homes. *Health Services Research* 46, no. 5 (October): 1495–1516.
- Bowblis, J. R., and C. S. Brunt. 2014. Medicare skilled nursing facility reimbursement and upcoding. *Health Economics* 23, no. 7 (July): 821–840.
- Carson, S. S. 2012. Research needs and strategies to establish best practices and cost effective models for chronic critical illness. *Respiratory Care* 57, no. 6 (June): 1014–1018, discussion 1019–1020.
- Castle, N. G. 2008. Nursing home caregiver staffing levels and quality of care: A literature review. *Journal of Applied Gerontology* 27, no. 4: 375–405.
- Center for Medicare & Medicaid Innovation, Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2019. BPCI Advanced participants, January 2019. <https://innovation.cms.gov/Files/worksheets/bpci-advanced-participants.xlsx>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2018a. Meaningful Measures Initiative Hub. <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/MMF/General-info-Sub-Page.html>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2018b. Medicare and Medicaid programs; CY 2019 home health prospective payment system rate update and CY 2020 case-mix adjustment methodology refinements; home health value-based purchasing model; home health quality reporting requirements; home infusion therapy requirements; and training requirements for surveyors of national accrediting organizations. Final rule. *Federal Register* 83, no. 151 (July 12): 32340–32522.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2018c. Medicare program; inpatient rehabilitation facility prospective payment system for federal fiscal year 2019. Proposed rule. *Federal Register* 83, no. 151 (August 8): 38514–38573.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2018d. Medicare program; prospective payment system and consolidated billing for skilled nursing facilities (SNF) proposed rule for FY 2019, SNF Value-Based Purchasing Program, and SNF Quality Reporting Program. Proposed rule. *Federal Register* 83, no. 89 (May 8): 21018–21101.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2016. Medicare and Medicaid programs; reform of requirements for long-term care facilities. Final rule. *Federal Register* 81, no. 192 (October 4): 68688–68872.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2010. Medicare program; home health prospective payment system rate update for calendar year 2011; changes in certification requirements for home health agencies and hospices Final rule. *Federal Register* 75, no. 221 (November 17): 70372–70486.
- District of Columbia. 2019. District of Columbia municipal regulations: Nursing facilities. Title 22B. Chapter 3215. Ventilator care services.
- Dummit, L., K. Smathers, O. J. Bright, et al. 2018. *CMS Comprehensive Care for Joint Replacement Model: Performance year 1 evaluation report*. Report prepared by the Lewin Group for the Centers for Medicare & Medicaid Services. Falls Church, VA: The Lewin Group. <https://downloads.cms.gov/files/cmmt/bpci-models2-4yr3evalrpt.pdf>.
- Finkelstein, A., Y. Ji, N. Mahoney, et al. 2018. Mandatory Medicare bundled payment program for lower extremity joint replacement and discharge to institutional post-acute care: Interim analysis of the first year of a 5-year randomized trial. *Journal of the American Medical Association* 320, no. 9 (September 4): 892–900.
- Gage, B., M. Morley, L. Smith, et al. 2012. *Post-Acute Care Payment Reform Demonstration: Final report, volume 1 of 4*. Prepared under contract to the Centers for Medicare & Medicaid Services. Baltimore, MD: CMS.
- Government Accountability Office. 2018. *Nursing home quality: Continued improvements needed in CMS's data and oversight*. GAO-18-694T. Washington, DC: GAO.
- Harrington, C., J. F. Schnelle, M. McGregor, et al. 2016. The need for higher minimum staffing standards in U.S. nursing homes. *Health Services Insights* 9: 13–19.

- Heinemann, A. W., A. Deutsch, D. Cella, et al. 2018. Feasibility of collecting patient-reported outcomes for inpatient rehabilitation quality reporting. *Health Services Research* 53, no. 3 (June): 1834–1850.
- Linehan, K. 2017. *Provider criteria under a unified PAC PPS*. Washington, DC: L & M Policy Research.
- Massachusetts Medical Society. 2018. *Patient-reported outcome measures: Current state and MMS principles*. Waltham, MA: MMS.
- Medicare Payment Advisory Commission. 2018a. MedPAC comment on CMS’s proposed rule on the inpatient rehabilitation facility PPS for FY 2019. June 25.
- Medicare Payment Advisory Commission. 2018b. *Report to the Congress: Medicare and the health care delivery system*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2018c. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2017a. *Report to the Congress: Medicare and the health care delivery system*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2017b. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2017c. *Report to the Congress: Regional variation in Medicare Part A, Part B, and Part D spending and service use*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2016a. *Report to the Congress: Medicare and the health care delivery system*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2016b. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2015. *Report to the Congress: Medicare and the health care delivery system*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2014. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2010. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- National Quality Forum. 2013. *Patient reported outcomes (PROs) in performance measurement*. Washington, DC: NQF.
- New Jersey Department of Health and Senior Services. 2004. Policy manual for long term care services. 8:33H–1.6 specialized long-term care. Trenton, NJ: New Jersey Department of Health and Senior Services. <http://3e3wit1jv3691nlvtvx1r85n3-wpengine.netdna-ssl.com/wp-content/uploads/2015/07/njac833h.pdf>.
- Ng, S., R. O. Morgan, A. Walder, et al. 2014. Functional decline predicts emergency department use in veterans with dementia. *American Journal of Alzheimer’s Disease & Other Dementias* 29, no. 4 (June): 362–371.
- Office of Inspector General, Department of Health and Human Services. 2018. *Escalating Medicare billing for ventilators raises concerns*. OEI–12–15–00370. Washington, DC: OIG.
- Office of Inspector General, Department of Health and Human Services. 2015. *The Medicare payment system for skilled nursing facilities needs to be reevaluated*. Report no. OEI–02–13–00610. Washington, DC: OIG.
- Pozniak, A., M. Turenne, P. Mukhopadhyay, et al. 2018. *Evaluation of the home health value based purchasing (HHVBP) model: First annual report*. Report prepared for The Centers for Medicare & Medicaid Services (CMS) Center for Medicare & Medicaid Innovation (CMMI) by the Arbor Research Collaborative for Health. Washington, DC: CMMI. <https://innovation.cms.gov/Files/reports/hhvbp-first-annual-rpt.pdf>.
- RAND Corporation. 2018. Early findings from the RAND IMPACT national beta test of Candidate Standardized Patient Assessment Data Elements (SPADEs). Presentation. November 27. <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/Downloads/Early-Findings-from-the-RAND-IMPACT-National-Beta-Test.pdf>.
- Rau, J. 2018. ‘It’s almost like a ghost town.’ Most nursing homes overstated staffing for years. *New York Times*, July 7.
- Rose, A. J., E. Bayliss, L. Baseman, et al. 2019. Feasibility of distinguishing performance among provider groups using patient-reported outcome measures in older adults with multiple chronic conditions. *Medical Care* 57, no. 3 (March): 180–186.
- Soley-Bori, M., R. Soria-Saucedo, C. M. Ryan, et al. 2015. Functional status and hospital readmissions using the Medical Expenditure Panel Survey. *Journal of General Internal Medicine* 30, no. 7 (July): 965–972.

State of New York. 2018. 10 CRR–NY 415.38. Official compilation of codes, rules and regulations of the State of New York. Title 10: Department of Health. Chapter V: Medical facilities. Subchapter A: Medical facilities—minimum standards. Article 3: Residential care facilities. Part 415. Nursing homes—minimum standards. Optional services. [https://govt.westlaw.com/nycrr/Document/I4fe5e041cd1711dda432a117e6e0f345?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=\(sc.Default\)](https://govt.westlaw.com/nycrr/Document/I4fe5e041cd1711dda432a117e6e0f345?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)).

Wagle, N. 2017. Implementing patient-reported outcome measures. *NEJM Catalyst*. October 12. <https://catalyst.nejm.org/implementing-proms-patient-reported-outcome-measures/>.

Wiencek, C., and C. Winkelman. 2010. Chronic critical illness: prevalence, profile, and pathophysiology. *AACN Advanced Critical Care* 21, no. 1 (January–March): 44–61.

Wissoker, D., and B. Garrett. 2019. *Simulating an episode-based payment system for post-acute care*. Washington, DC: The Urban Institute.