CHAPTER 7

A revised prospective payment system for skilled nursing facilities

RECOMMENDATIONS

7A The Congress should require the Secretary to revise the skilled nursing facility prospective payment system by:

- adding a separate nontherapy ancillary component,
- replacing the therapy component with one that establishes payments based on predicted patient care needs, and
- adopting an outlier policy.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

7B The Secretary should direct skilled nursing facilities to report more accurate diagnostic and service-use information by requiring that:

- claims include detailed diagnosis information and dates of service,
- services furnished since admission to the skilled nursing facility be recorded separately in the patient assessment, and
- skilled nursing facilities report their nursing costs in the Medicare cost reports.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

CHAPTER 7

A revised prospective payment system for skilled nursing facilities

Chapter summary

The Commission, CMS, the Government Accountability Office, and health services researchers have identified two key problems with Medicare's prospective payment system (PPS) for skilled nursing facility (SNF) services. First, it does not adequately adjust payments to reflect the variation in facility costs for nontherapy ancillary (NTA) services such as intravenous (IV) medications, respiratory therapy, and drugs. Second, payments vary with the amount of therapy (e.g., therapeutic exercise and therapeutic activities) furnished, creating an incentive to furnish therapy services for financial rather than clinical reasons. In addition, the PPS does not include an outlier policy to defray the exceptionally high costs of some patients, which could make some providers reluctant to admit patients who are likely to be high cost.

The Commission contracted with the Urban Institute to develop an alternative PPS design to address these problems. Using patient and stay characteristics (e.g., the physical status of the patient and the duration of the stay) that best predicted costs per day, we designed a separate NTA payment component to add to the PPS and revised the

In this chapter

existing therapy payment component. We also developed an outlier policy based on exceptionally high ancillary costs per stay. To evaluate these changes, we assessed their accuracy in predicting NTA and therapy costs per day and their impact on facilities' payments. We considered whether the new design would create any inappropriate incentives, what would be required to implement the design, and what additional data would further improve payment accuracy and help monitor care quality.

Our findings provide strong evidence that a revised PPS design would better target payments to stays with high NTA costs, more accurately calibrate therapy payments to therapy costs, and afford some financial protection to SNFs that treat stays with exceptionally high ancillary costs compared with the existing PPS. Because the revised PPS would establish more accurate payments, SNFs would be much less likely to avoid patients whom hospital discharge planners reported having difficulty placing—those requiring IV antibiotics, expensive medications, and ventilator care. For these beneficiaries, access would improve. The chapter includes a recommendation to the Congress to revise the SNF PPS by adding a separate NTA payment component, replacing the therapy component with one that bases payments on predicted care needs, and adopting an outlier policy.

Recommendation 7A

The Congress should require the Secretary to revise the skilled nursing facility prospective payment system by:

- *adding a separate nontherapy ancillary component,*
- *replacing the therapy component with one that establishes payments based on predicted patient care needs, and*
- *adopting an outlier policy.*

COMMISSIONER VOTES:
YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

We estimated the effects of a revised PPS on payments compared with current policy, and the results confirm that the targeting designs would be successful at raising payments for stays with high NTA costs. If implemented in a budget-neutral manner, aggregate payments would increase by 15 percent to more than 20 percent for facilities with the highest (top 10th percentile) NTA or ancillary costs per day, the highest shares (top

10th percentile) of patients in the extensive services case-mix groups (e.g., patients needing IV medications, tracheostomy care, or ventilator support), and the lowest shares (bottom 10th percentile) of patients in rehabilitation-only case-mix groups. Payments would also increase for facilities with the largest shares of patients in special care case-mix groups (e.g., those needing wound care). Payments would decline for facilities with the largest shares of rehabilitation-only patients and the smallest shares of patients in extensive services and special care case-mix groups.

Relative to the current PPS, we estimate that the revised design would increase aggregate payments to hospital-based SNFs and nonprofit SNFs and would reduce payments to freestanding SNFs and for-profit SNFs. There would be no shift in aggregate payments between rural and urban facilities. Not all facilities within a group would experience the same changes in payments, given the various mixes of patients and treatment patterns.

An outlier policy for exceptionally high ancillary costs would affect many SNFs but generally would have small effects on payments. Only a subset of facilities would receive higher ancillary payments as a result of the outlier policy, even though most SNFs would receive outlier payments, because base payments would be reduced so that total spending does not increase.

The revised PPS design would not require SNFs to collect any new data but, like any changes to a PPS, would require CMS to take several steps to implement. Payment accuracy is improved with the use of patient diagnosis information; however, because the quality of the information currently gathered by SNFs is poor, the best PPS designs use diagnosis information from the prior hospital stay. Requiring SNFs to report complete diagnosis information on their claims would facilitate CMS's implementation of the best alternative PPS designs. The best models also include whether IV medications were furnished to a patient. However, these data can include services provided during the prior hospital stay, so CMS would need to check that specific services appear to have been provided by the SNF. Revising the questions in the patient assessment tool would eliminate this

check but would require SNFs to change the services they record in the patient assessments.

One drawback common to prospectively set payments for a bundle of services is that facilities may be encouraged to furnish fewer services. Under the revised PPS design, facilities would have a financial incentive to furnish less therapy than may be clinically appropriate. CMS would need to monitor therapy provision and patient outcomes, underscoring the need to require SNFs to assess patients at discharge. A pay-for-performance program, as recommended by the Commission, that linked SNF payments to patient outcomes would help counter incentives to stint on services because poor beneficiary outcomes would result in lower payments. In addition, a low utilization payment adjustment that pays for therapy services on a cost basis for stays with therapy costs well below predicted levels may help discourage facilities from underproviding therapy services.

In developing these payment system changes, our work was hampered by inadequate information on patient diagnoses, the services furnished during the SNF stay, and nursing costs. Better data would further improve payment accuracy and enable the value of care to be assessed by linking payments, costs, service use, and patient outcomes. Our second recommendation directs CMS to require facilities to provide information on patient diagnoses, service use during the SNF stay, and nursing costs. ■

Recommendation 7B

The Secretary should direct skilled nursing facilities to report more accurate diagnostic and service-use information by requiring that:

- *claims include detailed diagnosis information and dates of service,*
- *services furnished since admission to the skilled nursing facility be recorded separately in the patient assessment, and*
- *skilled nursing facilities report their nursing costs in the Medicare cost reports.*

COMMISSIONER VOTES:
YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

Medicare's skilled nursing facility (SNF) prospective payment system (PPS) is widely acknowledged to have two basic problems: It does not accurately pay for nontherapy ancillary services (NTA)—such as drugs, intravenous (IV) medications, and respiratory services—and it encourages facilities to provide therapy services (e.g., therapeutic exercise and therapeutic activities) for financial, not clinical, reasons (Abt Associates 2000, CMS 2000a, GAO 1999, Kramer et al. 1999, MedPAC 2007b, MedPAC 2005b, MedPAC 2002, MedPAC 2001, MedPAC 2000, White 2003, White et al. 2002). In its June 2007 report to the Congress, the Commission described CMS-funded research that examined ways to improve the PPS Medicare uses to pay SNFs (MedPAC 2007b). This work, conducted by the Urban Institute, examined ways to: separately pay for NTA services such as drugs, IV medications, and respiratory therapy; base payments for therapy services on predicted care needs, not service provision; and defray the costs of exceptionally expensive stays. We concluded that a revised PPS could set payments more accurately and afford SNFs some financial protection against exceptionally high-cost stays. If payments were more accurate, SNFs would have less incentive to avoid certain types of patients and access would improve for beneficiaries with high NTA care needs.

On the basis of these findings, we contracted with the Urban Institute to revise the PPS to include the following elements: a separate payment for NTA services, prospectively set payments for therapy services using patient and stay characteristics, and a budget-neutral outlier policy targeting exceptionally high-cost cases.

In this chapter, we examine alternative designs for the NTA and therapy payment components and an outlier policy, estimate the combined effect of a revised PPS design on facility payments using the best NTA and therapy component designs we tested, and discuss the need for additional data to improve payment accuracy.

How Medicare currently pays for SNF services

Medicare covers up to 100 days of SNF care when a beneficiary requires skilled nursing or rehabilitation services after a hospitalization of at least three days in the preceding month. The general goal of this care is recovery to the maximum level of functioning; three-quarters of SNF patients receive rehabilitation services (physical and occupational therapy and speech–language pathology services). Each year, about 3 percent of beneficiaries use SNF services; in 2007, Medicare spent more than $21 billion on these services. The most common conditions treated in a SNF (as determined by examining hospital discharge diagnoses) involve recovery from hip and knee joint replacement, heart failure and shock, pneumonia and pleurisy, broken hips, and strokes.

The SNF PPS design

SNFs receive a daily rate to cover nursing, ancillary, and capital costs (a more complete description of the PPS is found in *Medicare payment basics: Skilled nursing facility services payment system* (MedPAC 2007a)). The rate is adjusted for differences in case mix using the resource utilization group (RUG) classification system.[1] Patients are classified into a RUG based on the number and type of minutes of therapy used or expected to be used, the need for certain services (e.g., respiratory therapy and specialized feeding), certain clinical conditions (e.g., pneumonia and dehydration), the ability to perform activities of daily living (e.g., eating and toileting), and, in some cases, signs of depression.

Each daily payment has three components—a nursing component intended to reflect the intensity of nursing care and NTA services that patients are expected to require; a therapy component to reflect the physical and occupational therapy and speech–language pathology services provided or expected to be provided; and a component to cover room and board and other capital-related costs. The nursing and therapy components have separate base rates and case-mix weights to reflect their relative resource requirements; the other component is a fixed amount per day for all patients. In 2008, for patients in urban SNFs, the daily nursing base rate was $146.62, the therapy base rate was $110.44, and the other component was $74.83. For each day, the three components are summed. Therapy payments account for 16 percent to 60 percent of the daily payment depending on the case-mix group. There is no outlier policy to defray the costs of exceptionally costly stays.

The current PPS design incorporates features of prospectively set payments (for the nursing and other services components) and payments based on a fee schedule (for the therapy component). Facilities have a financial incentive to underfurnish nursing services because they will be paid the prospective rate regardless of the amount of service furnished. At the same time,

they have an incentive to furnish therapy services because therapy minutes are used to group patients into five tiers, with higher payments for each tier.

Problems with the SNF PPS design

Analysts have identified two basic problems with the existing SNF PPS. First, the RUG classification system does not adequately adjust payments to reflect the variation in providers' costs for NTA services. The system distributes payments for NTA services based on the expected amount of nursing care. Under this design, payments are the same for patients who require equivalent nursing care but different levels of NTA services such as expensive drugs and respiratory services. As a result, the relationship of the nursing case-mix weights to NTA costs is weak, with the weights accounting for only about 5 percent of the variation in NTA costs in 2003 (Urban Institute 2007). Although NTA costs make up a sizable share (16 percent on average) of total SNF costs, payments are not necessarily higher for patients who are expected to use these services (GAO 1999, White et al. 2002).

In addition, NTA costs vary across stays considerably more than nursing costs—18-fold compared with 2-fold (CMS 2006). Nursing payments vary but not enough to account for the range in NTA costs. Payments are too high for many beneficiaries and too low for those who need expensive NTA services. Hospital discharge planners and hospital administrators have reported problems placing patients who need IV antibiotics, expensive drugs, or ventilator care (Liu and Jones 2007, OIG 2006).

In an attempt to correct this shortcoming, in 2006 CMS added case-mix groups to the classification system for patients who qualify for both the rehabilitation and extensive services RUGs, which prior work found had higher NTA costs (Abt 2000).[2] The extensive services RUGs include patients who need IV medications, tracheostomy care, or ventilator support. CMS also increased the nursing case-mix weights by a uniform percentage for all RUGs, with the intent to improve the targeting of payments for NTA costs. However, the refinements remain insufficient, as payments continue to be tied to nursing time. In a comment letter to CMS on the proposed refinements, the Commission noted that the refinements were inadequate (MedPAC 2005a).

The second key problem with the current PPS is that payments increase with the amount of therapy delivered (or expected to be provided), creating a financial incentive to furnish therapy services. Over time, the number of beneficiaries receiving therapy and the amount they receive have increased.[3] CMS's refinements to the PPS in 2006 did not modify the financial incentive to provide therapy services. In 2006, rehabilitation days made up 86 percent of all Medicare days (up from 83 percent the year before) and the share of days in the highest rehabilitation RUGs (the ultra high and very high groups) grew 7 percentage points, accounting for 59 percent of the rehabilitation days (MedPAC 2008b). Given the growth in the provision of therapy services, we are concerned that current levels of therapy provision do not reflect only the care needs of patients.

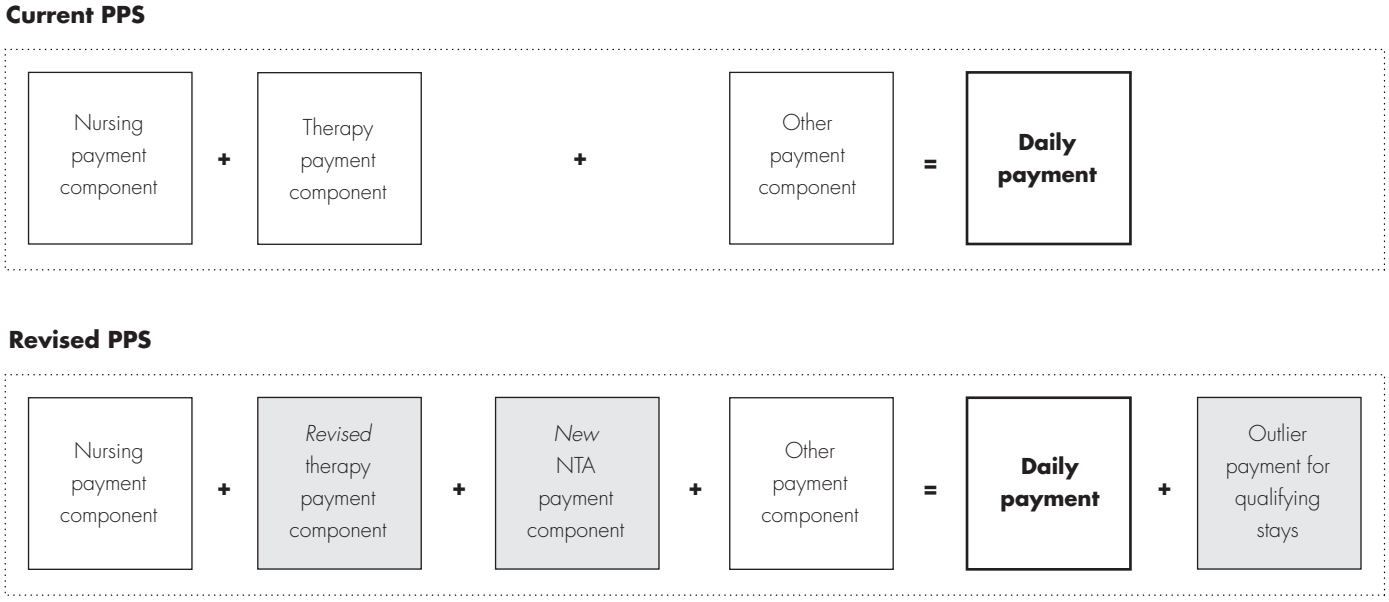
Another shortcoming of the SNF PPS is that it does not include an outlier policy to defray the costs of exceptionally costly cases. The goals of outlier policies are to minimize the financial risks for SNFs treating more costly patients, reduce potential access problems for costly patients, and help ensure that patients, once admitted, receive the care they need (Keeler et al. 1988). Outlier payments should not correct for systematic mismatches between payments and costs that result from limitations of a classification system, but they offer providers insurance protection against large losses. Outlier policies also help ensure access for beneficiaries whose care needs are likely to greatly exceed payments, particularly those who can be easily identified before SNF admission.

Designing a revised SNF PPS

The Commission considered three significant revisions to the SNF PPS (Figure 7-1). The first is to add a fourth payment component to the payment system that would target payments for NTA services. The second is to replace the existing therapy component with one that predicts care needs based on patient and stay characteristics. The third is to add a budget-neutral outlier policy.

The Urban Institute researchers constructed alternative designs for the NTA and therapy components that predicted per day costs for NTA and therapy services. They used the alternative designs that best predicted therapy and NTA costs to simulate payments under a revised PPS and then compared them with payments under current policy. The effect of a budget-neutral outlier policy targeting extraordinarily high ancillary costs on payments was also estimated.

FIGURE 7–1 **Comparison of current and revised skilled nursing facility PPS designs**



Note: PPS (prospective payment system), NTA (nontherapy ancillary).

Alternative designs for the NTA and therapy components

Our analysis compares different designs of the NTA and therapy components to estimate daily NTA and therapy costs. The researchers carefully evaluated the patient and stay characteristics, including those considered in previous work, to see how much each predictor contributed to explaining cost variation and to assess any inappropriate incentives that might result if the predictor were included in the payment component.[4] Most of the predictors were evaluated by a team of researchers headed by Dr. Andrew Kramer at the University of Colorado and were generally accepted as reasonable by a technical advisory panel (Urban Institute 2007).

The patient- and stay-level predictors include:

- the patient's age,
- the broad RUG category,[5]
- the patient's use of respiratory or IV medications in the SNF,
- the patient's physical and mental condition,
- the patient's ability to perform activities of daily living,
- information about the patient's diagnoses from the prior hospital stay,
- the patient's prior stay in a nursing home, and
- a length-of-stay proxy.[6]

Alternative designs vary in the predictors they include

The alternative designs for the NTA and therapy components vary in the predictors they include to estimate daily costs (see text box, pp. 180–181, on predicting NTA and therapy costs). Each alternative presents tradeoffs between its accuracy in predicting costs and other factors such as administrative simplicity.

Some of the NTA and therapy component designs include the full range of predictors—patient and stay characteristics from SNF claims, patient assessment information, an indicator that IV medications were furnished, and hospital diagnoses (Table 7-1 (p. 181) includes a list of predictors).[7] Because the quality of the SNF diagnosis coding is poor, the more accurate models

Predicting nontherapy ancillary and therapy costs per day

The alternative designs for the nontherapy ancillary (NTA) and therapy component are based on models that predict NTA and therapy costs per day. The Urban Institute researchers developed separate regression models to predict per day NTA and therapy costs using characteristics of the patient and the stay. The models use Poisson regression, which reflects the skewed distribution of costs per day. Many versions of NTA and therapy cost models were estimated using a random sample of 10 percent of stays and were evaluated using all stays from a random sample of 30 percent of facilities. The NTA and therapy models use very similar sets of predictors, but the coefficients (the direction and magnitude of a predictor's influence on costs) are generally different. For example, the impact of intravenous therapy as a predictor differed between NTA and therapy costs per day—increasing predicted NTA costs per day and decreasing predicted therapy costs per day. Using separate regression models allows the predictor to adjust NTA costs upward and therapy costs downward.

The alternative prospective payment system designs for the NTA and therapy components include patient and stay characteristics that help explain differences in the average NTA costs and therapy costs per day (Table 7-1). In the alternative component designs we

(continued next page)

also use diagnosis information from hospital claims.[8] The transfer of diagnostic information between the hospital and the SNF is essential for proper patient handoffs between settings but would take some work on the part of providers and CMS to administer. The provision of IV medications as a predictor recognizes the high cost for these services.

We also considered NTA and therapy component designs that would be simpler to implement and avoid the potential incentive to furnish unnecessary IV medications if the adjuster results in payments that are higher than a facility's costs. These designs exclude the hospital diagnoses and the predictor indicating that IV medications were furnished during the SNF stay.

The therapy component designs also differed in whether they included a predictor indicating whether the patient day was grouped into a rehabilitation RUG (i.e., the patient received at least 45 minutes of therapy per week). In designs with this predictor, payments would be higher for patients who were grouped into a rehabilitation RUG but, unlike the current PPS design, payments would not increase if more therapy were furnished. Instead, payments would increase as a function of patient and stay characteristics. For example, therapy payments would be higher for patients recovering from strokes or hip fractures than for cancer patients.

Selecting the best NTA and therapy designs

We used three criteria to evaluate the predictive ability of the alternative designs for the NTA and therapy components.

- Ability to explain cost differences across stays (the stay-level R-squared) and at the facility level (the facility-level R-squared).[9] Without accounting for a reasonably large share of the cost variation, a revised design would retain financial incentives for facilities to admit certain types of patients and avoid others.
- Effectiveness in predicting high-cost cases. An accurate model should be able to predict high-cost cases. We measure the share of stays in the top 10 percent of costs accurately predicted to be high cost.
- Proportionality between a facility's payments and its expected costs. For each component (NTA or therapy), a case-mix index (CMI) coefficient measures whether the relative expected costliness (of its NTA or therapy costs) of a facility's cases is proportional to the payments (the NTA or therapy payments). The CMI is calculated as the average predicted cost for the facility's cases divided by the average cost for all cases. Regression analysis was used to estimate the CMI coefficient, which measures the relationship between the actual average costs and the CMI used for

Predicting nontherapy ancillary and therapy costs per day (cont.)

tested, predictors were included if they contributed to the explanatory power of the model and were statistically significant in either the NTA or the therapy cost model.[10] Consistent with the prior work, some characteristics (e.g., keeping patients in bed or tube-feeding patients) were excluded because their inclusion in a payment component could create inappropriate incentives for providers to augment payments. ■

TABLE 7–1 **Patient and stay characteristics used to predict NTA and therapy costs**

Characteristic	Measure
Patient	
Age	Years
SNF care	
IV medication furnished	Yes/No
Respiratory care	Yes/No
IV medication and respiratory care	Yes/No
IV medication and respiratory condition in SNF stay	Yes/No
Physical and mental status	
Respiratory condition in SNF	Yes/No
No infection	Yes/No
Serious skin ulcer (stage 4)	Yes/No
Shortness of breath	Yes/No
Cognitive function	Cognitive Performance Scale score (6 levels)
Chewing problem (to help predict speech therapy)	Yes/No
Swallowing problem (to help predict speech therapy)	Yes/No
Surgical wounds	Yes/No
Ability to perform activities of daily living	
Locomotion on unit (ease in moving from patient's room to adjacent corridor on same floor)	5 levels
Assistance with eating	5 levels
Transfer to/from bed, chair, wheelchair, or standing position	5 levels
Hospital diagnoses	
Diagnoses	21 indicators
HIV	Yes/No
Solid organ transplant	Yes/No
Stay	
Broad RUG category	5 indicators
Prior nursing home stay	Yes/No
Length-of-stay proxy	Number of patient assessments

Note: NTA (nontherapy ancillary), SNF (skilled nursing facility), IV (intravenous), HIV (human immunodeficiency virus), RUG (resource utilization group). Broad RUG categories include rehabilitation, rehabilitation and extensive services, extensive services, special care, and clinically complex. Respiratory care indicates oxygen (linked to specific conditions), tracheostomy care, or ventilator care. Nursing homes are federally required to assess each patient's functional, mental, and behavioral status at set intervals throughout a patient stay using the Minimum Data Set. The number of patient assessments increases with a patient's length of stay.

Source: Analyses prepared for MedPAC by the Urban Institute, 2008.

Outlier policies vary considerably across prospective payment systems

Medicare's prospective payment system (PPS) outlier policies for other services vary considerably (Table 7-2). The pools range from 1 percent to 8 percent, with small pools used for services that have less risk associated with them, either because the unit of payment is small (e.g., an individual service in the outpatient hospital PPS) or because some of the risk of an exceptionally costly stay is tempered with a per diem payment (e.g., the psychiatric hospital PPS). In four of the PPSs, the loss amounts are a fixed dollar amount. In contrast, the outlier policy in the home health care PPS uses an amount that is a multiple of the episode payment; the outpatient PPS uses a combination of a fixed-loss amount and a multiple of the base rate. The loss-sharing amount is most frequently set at 80 percent. In the psychiatric hospital PPS, the loss-sharing amount declines after the median length of stay, from 80 percent to 60 percent, to reflect the declining costs per day with longer stays. ■

TABLE 7–2 **Existing Medicare PPS outlier policies provide models for a SNF outlier policy**

PPS, by setting	Service unit	Pool size	Fixed-loss amount	Loss-sharing ratio
Home health agency	Episode	5.0%	0.89 times the episode amount	80%
Inpatient rehabilitation facility	Discharge	3.0	$7,362	80
Psychiatric hospital	Day	2.0	$6,488	80% for days 1–9 60% for days 10+
Long-term care hospital	Discharge	8.0	$20,738	80
Hospital inpatient	Discharge	5.1	$22,640	80
Hospital outpatient	Individual service	1.0	1.75 times base rate and the cost must exceed the base rate by at least $1,575	50

Note: PPS (prospective payment system), SNF (skilled nursing facility).

Source: CMS 2008, CMS 2007a, CMS 2007b, CMS 2007c, CMS 2007d, CMS 2000b.

payments (the predicted costs).[11] A CMI coefficient of 1.0 indicates that a facility would be paid in proportion to its costs. There would be no gain from taking a more or less difficult case load because increased payments are offset by proportionate increases in costs. A coefficient greater than 1.0 indicates that a facility with a relatively costly case mix would tend to be underpaid, whereas a facility with a relatively inexpensive case mix would tend to be overpaid (Cotterill 1986, Pettengill and Vertrees 1982).[12] A CMI coefficient below 1.0 indicates that a facility with a relatively costly case mix would tend to be overpaid, while a facility with a less costly case mix would tend to be underpaid.

An outlier policy design

The PPS redesign includes the addition of an outlier policy to partially compensate providers that treat exceptionally costly patients. Consistent with other PPS outlier policies, payments would cover only a portion of the losses incurred in treating exceptionally costly cases so that a provider retains an incentive to be efficient (see text box). A provider must cover the difference between the PPS payment and the fixed loss associated with an exceptionally costly case. To discourage inappropriately extended stays, outlier payments cover only a portion of costs above the fixed-loss amount. The portion paid above the fixed-loss amount is often based on an estimate of the marginal costs. The outlier policy design needs to specify the share of payments to redistribute to high-cost cases (the target amount or "pool" size), the amount of

a provider's loss to qualify for an outlier payment (the fixed-loss amount), and the share of the costs that outlier payments will cover beyond the fixed loss (the loss-sharing ratio).[13]

Outlier policies are generally financed by lowering the base payments for all cases by a small amount so that total spending remains budget neutral. As such, outlier policies need to balance the protection they offer to SNFs with the lower payments SNFs would receive for all other cases.

We defined outlier cases comparing costs and payments on a per stay basis. The financial risk for a facility is determined by its losses over the stay, not on a given day. A similar rationale is used to define the psychiatric hospital outlier policy, a PPS with per day payments and a per stay outlier policy. Furthermore, because dates of service are not collected on SNF claims, the days when services were delivered (and the associated costs) cannot be determined.

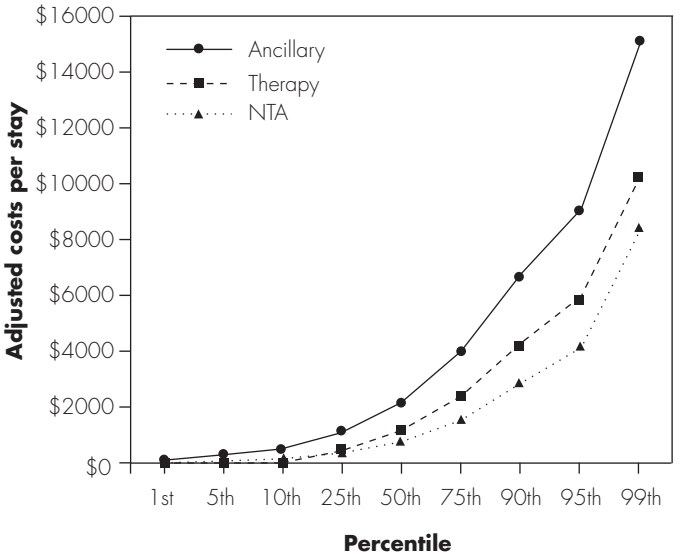
Although outlier policies typically consider total costs, we examined policies that would target ancillary (NTA and therapy) costs because they are highly variable and fluctuate due to differences among patients. Ancillary costs average 40 percent of total stay costs. Focusing on ancillary costs also avoids advantaging hospital-based facilities that would be more likely to qualify for outlier payments if total costs were used because hospital-based facilities have routine costs more than double those of freestanding facilities. Any higher costs incurred by hospital-based facilities that are attributable to their patient mixes would be reflected in these facilities' ancillary costs.

An outlier policy based on total ancillary (NTA plus therapy) costs can address the stays with exceptionally high therapy or NTA costs (or both). We considered an outlier policy targeting only exceptionally high NTA costs but found that some stays had exceptionally high therapy costs (Figure 7-2). The 99th percentile for NTA and therapy costs were both 10 times their medians. An outlier policy focused on NTA costs would benefit stays with exceptionally high NTA costs but would do nothing to defray the costs for stays with exceptionally high therapy costs. An outlier policy for exceptionally high ancillary costs allows stays with unusually high NTA or therapy costs (or both) to qualify for additional payments without advantaging stays with certain care needs over others.

We examined the distribution of ancillary losses per SNF stay under a revised PPS to determine the share of stays with exceptionally large losses. Just over 1 percent of stays incur losses of $5,000 or more per stay (Table 7-3, p. 184).

FIGURE 7–2

Exceptionally high NTA, ancillary, and therapy costs per stay are nearly 10 times higher than the median



Note: NTA (nontherapy ancillary). Exceptionally high-cost stays are at the 99th percentile in the distribution of per stay costs. Costs are adjusted for differences in labor costs.

Source: Analysis of 2003 skilled nursing facility claims, cost reports, and DataPro stays conducted for MedPAC by the Urban Institute, 2008.

A $3,000 fixed loss on ancillary services was used to assess the impact of an outlier policy on payments under a revised PPS design. This fixed loss requires SNFs to incur a loss on ancillary services roughly equal to the average ancillary cost per stay. We evaluated three other outlier policies—a $5,000 fixed-loss amount and two outlier pool sizes (2 percent and 3 percent). The 3 percent pool resulted in a pool that was sufficiently large that the fixed-loss amount ($1,442 per stay) did not appear to warrant an outlier policy. The fixed loss of $5,000 resulted in a pool that we considered too small, affecting only about 1 percent of stays. The 2 percent outlier pool had results fairly comparable to the $3,000 fixed-loss amount.

Evaluating the impact of a revised PPS

We considered several factors to evaluate a revised PPS design. First, we selected the alternative design of the NTA and therapy components that best predicted per day costs, as discussed above. Next, using the best designs for the NTA and therapy components and an ancillary outlier

TABLE 7–3 **Just over 1 percent of SNF stays incur ancillary losses of $5,000 or more**

	Ancillary loss per stay					
	Less than $1,000	$1,000–$2,500	$2,500–$5,000	$5,000–$10,000	$10,000–$25,000	More than $25,000
Percent of all stays	13.7%	4.7%	2.0%	0.8%	0.2%	<0.1%
Percent of stays with ancillary losses	64	22	9	4	1	<1

Note: SNF (skilled nursing facility). Ancillary losses are defined as per stay ancillary (nontherapy ancillary plus therapy) payments minus per stay ancillary costs.

Source: Analysis of 2003 skilled nursing facility claims, cost reports, and DataPro stays conducted for MedPAC by the Urban Institute, 2008.

policy, we compared payments under a revised PPS with payments under current policy (see text box describing how current and model payments were calculated). We examined the shifts in payments across different types of cases and SNFs as well as the distributions of the changes in payments.

We also considered the incentives a revised PPS would create, its data requirements, and the ease of implementation. One goal of the redesign was to avoid incentives that encourage the provision of services for financial reasons. Another goal was to avoid creating incentives for facilities to select the mix of cases they treat. A third goal was to minimize providers' data-reporting requirements. A final goal was to develop a revised PPS that CMS could readily implement.

A revised PPS design would make payments more accurate than current policy

Revising the current PPS design will improve the accuracy of payments and limit the incentives for SNFs to select certain types of cases over others and to furnish therapy services for financial reasons. Adding an NTA component to the PPS would substantially improve the payment system's ability to account for differences in NTA costs. Replacing the existing therapy component with one based on patient and stay characteristics (instead of service use) would account for differences in therapy cost as well as the current PPS. Both components would result in payments that are more proportional to costs, thereby lowering the incentive to select certain types of patients over others.

A revised PPS with an NTA component would make payments considerably more accurate than the current PPS

A new NTA component would substantially improve the accuracy of payment for NTA services relative to the current PPS (Table 7-4, p. 186). As a basis for comparison, we examined the ability of the current PPS to predict NTA costs. The current design explains only 5 percent of stay-level NTA costs per day. In addition, of the total high-cost stays (those in the top 10 percent of costs), only 25 percent were accurately predicted to be high cost. At the facility level, a larger share (but still low, 13 percent) of the variation in per day NTA costs was explained by the current PPS.

Moreover, the current PPS does not allocate NTA payments in proportion to the services' costs. The high CMI coefficient (2.34) indicates that facilities with a more costly than average NTA case mix were underpaid for the NTA services they provided, whereas facilities with a less costly than average NTA case mix were overpaid. These results are consistent with what hospital administrators have told us: Facilities have an incentive to avoid cases that require high levels of NTA services and patients who need these services are difficult to place (MedPAC 2007b).

A revised PPS using patient and stay characteristics to predict NTA costs shows dramatic improvement in payment accuracy. The alternative PPS design that uses hospital diagnoses and IV medication predictors was the most accurate design evaluated. At the stay level, the design accounts for 23 percent of the variance in NTA costs and properly identifies as high cost 45 percent of the high-cost cases. At the facility level, the design accounts for 31 percent of the NTA per day cost variation across

Estimating current and revised prospective payment system payments

Using 2003 Medicare claims and cost-report data, we calculated payments under current policy and compared them with payments that would be made under a revised prospective payment system (PPS) design. The revised PPS used the alternative designs for the nontherapy ancillary (NTA) and therapy components that best predicted daily NTA and therapy costs. The details of the per stay ancillary cost outlier policy are described below.

Payments under current policy: We calculated per day skilled nursing facility payments under current policy using 2003 base rates and adjusting payments for area wages. To reflect the current case-mix groups, we used the case-mix groups and relative weights from fiscal year 2006, the year the classification system was expanded from 44 to 53 resource utilization groups. Payments include the add-on payments for HIV cases.

Payments under revised PPS designs: We used the alternative NTA and therapy component designs that best predicted per day costs, which included the hospital diagnoses, the rehabilitation indicator, and the intravenous medication predictor. To estimate NTA and therapy payments, we calculated new payment weights for the NTA and therapy components and applied them to the 2003 base rates. To establish an NTA base rate, we allocated a portion of the 2003 nursing base rate to NTA services using information from CMS on the share of nursing payments attributable to NTA services (43.4 percent of the urban nursing base rate and 42.7 percent of the rural nursing base rate).[14] We made adjustments to ensure budget neutrality within each payment category (NTA and therapy). We calculated nursing payments in the revised PPS designs in the same manner as for current payments, except that we removed the estimated NTA costs from the nursing base rate.

Modeling outlier payments: We examined the effects of an outlier policy that includes the following features:

- Outlier payments are based on per stay losses on ancillary services (NTA and therapy services combined), where ancillary losses are defined as per stay ancillary payments minus per stay ancillary costs.
- Payments are made to facilities that incur a loss on a stay of more than $3,000 (wage adjusted) in ancillary services.
- Outlier payments cover 80 percent of the per stay ancillary costs above the fixed loss amount.[15]
- The outlier payment policy is budget neutral and financed by a 1.7 percent reduction in the base payment amounts for ancillary services for all facilities. ■

facilities. With a CMI coefficient of 1.14, payments would be substantially closer to costs than they are under the current PPS. Using this NTA component design, NTA payments would be distributed much more in line with facility costs—raising payments for facilities that disproportionately treat patients with high needs for NTA services and lowering them for facilities that do not. As a result, the design would reduce incentives to avoid such cases.

A PPS design that excluded the hospital diagnoses and IV medication predictors would also considerably improve the accuracy of payments for NTA services compared with current policy. This PPS design would substantially improve the prediction of NTA costs at the stay and facility levels and result in payments more proportional to facility costs. Because this design does not require information from the patient's preceding hospital stay, it would be easier to implement than a design that includes it. However, the design would lose the clinical advantage of having patients' hospital information available to SNF caregivers. Excluding the IV medication predictor avoids the financial incentive to furnish IV drugs if the predictor was inaccurate and raised payments higher than facility costs. Yet, because IV medications are expensive, excluding this predictor from the component's design will result in less accurate payments.

TABLE 7–4

A separate NTA component would substantially improve the PPS's ability to predict NTA costs

Evaluation criterion	Current PPS design	Revised PPS design: With hospital diagnoses and IV medication predictors	Revised PPS design: Without hospital diagnoses and IV medication predictors
Stay-level analysis			
Percent of variation in NTA costs explained	5%	23%	18%
Percent of high-cost cases accurately predicted	25	45	39
Facility-level analysis			
Percent of variation in NTA costs explained	13	31	27
NTA CMI coefficient	2.34	1.14	1.17

Note: NTA (nontherapy ancillary), PPS (prospective payment system), IV (intravenous), CMI (case-mix index). Percent of high-cost cases predicted is the share of cases in the top 10 percent of NTA costs accurately predicted to be high cost. A CMI coefficient of 1.0 indicates that facility payments are proportional to facility costs. The number of stays included in the analysis was 173,441; the number of facilities was 3,647.

Source: Analysis of 2003 skilled nursing facility claims, cost reports, and DataPro stays conducted for MedPAC by the Urban Institute, 2008.

Revised therapy component would be as accurate as current policy but would more closely calibrate payments to costs

A revised design for the therapy component would be essentially as accurate as the current PPS in predicting therapy costs but would calibrate payments more closely to therapy costs. With payments nearly proportional to costs, facilities would not have a financial incentive to adjust their mix of cases. In addition, the redesign would remove the financial incentive to furnish therapy services to boost payments.

Our analysis compared three alternative designs with the current PPS payment component (Table 7-5). The current PPS accounts for 36 percent of the stay-level variation in therapy costs and 38 percent of the facility-level variation. In addition, almost one-third of high-cost cases are accurately predicted. However, the current PPS does not pay facilities for providing therapy services in proportion to their costs (the CMI coefficient is 0.79). It overpays facilities with above-average therapy costs and underpays facilities with below-average therapy costs.

One revised PPS design includes all the patient and stay characteristics, the hospital diagnoses, and the IV medication predictor but does not include the indicator that the patient was grouped into a rehabilitation RUG. Its predictive abilities at the stay level (19 percent) and at the facility level (15 percent) are considerably lower than the current PPS. Like the current payment weights, this design would tend to overpay facilities with above-average therapy costs, although less so than current policy does. Although the design would remove the financial incentive to provide more therapy, it does not accurately account for therapy costs.

Including the rehabilitation indicator in the therapy component design dramatically improves the PPS's ability to pay for therapy costs appropriately. This design accounts for essentially the same share of therapy cost differences across patients as the current PPS (34 percent compared with 36 percent) and it correctly predicts high-cost cases somewhat less frequently (28 percent compared with 32 percent). However, this design would establish payments at the facility level that would be much more proportional to average facility therapy costs (the CMI is 1.05) compared with current policy. The near proportionality indicates little overpayment or underpayment at the facility level, affording facilities little financial incentive to adjust their mix of cases. Further, unlike the current PPS, there would be no financial incentive to furnish therapy beyond the amount required to be grouped into the lowest rehabilitation RUGs (45 minutes of therapy a week). As with any PPS that establishes payments for a bundle of services, there would be an incentive to underprovide services, which would need to be addressed (see discussion, pp. 191–192).

Exploring the performance of a design that would be simpler to implement, a third alternative design includes

TABLE 7–5

A redesigned therapy component can explain cost variation as well as or better than the current PPS

Evaluation criterion	Current PPS design	Revised PPS designs: With hospital diagnoses and IV medication predictors, but no rehabilitation indicator	Revised PPS designs: With hospital diagnoses and IV medication predictors and rehabilitation indicator	Revised PPS designs: With rehabilitation indicator, but no hospital diagnoses or IV medication predictors
Stay-level analysis				
Percent of variation in therapy costs explained	36%	19%	34%	33%
Percent of high-cost cases accurately predicted	32	25	28	26
Facility-level analysis				
Percent of variation in therapy costs explained	38	15	35	35
Therapy CMI coefficient	0.79	0.83	1.05	1.06

Note: PPS (prospective payment system), IV (intravenous), CMI (case-mix index). Percent of high-cost cases predicted is the share of cases in the top 10 percent of therapy costs accurately predicted to be high cost. A CMI coefficient of 1.0 indicates that facility payments are proportional to facility costs. The number of stays included in the analysis was 173,441; the number of facilities was 3,647.

Source: Analysis of 2003 skilled nursing facility claims, cost reports, and DataPro stays conducted for MedPAC by the Urban Institute, 2008.

the rehabilitation indicator but excludes the hospital and IV medication variables. This alternative maintains nearly all the explanatory power and near proportionality of the design that includes them. Because it does not include any of the hospital information, it would be easier to implement than designs that include this information. However, it would lose the clinical advantage of ensuring the transfer of this information to the SNF.

A revised PPS would redistribute PPS payments, with changes in payments inversely related to PPS margins

The revised PPS—with a new NTA payment component, a revised therapy payment component, and an outlier policy for stays with exceptionally high ancillary cost per stay—would redistribute payments across different types of cases and the facilities that treat them. In aggregate, payments would increase to SNFs treating large shares of patients with extensive service and special care needs and low shares of rehabilitation-only patients. Based on their mix of patients and treatment patterns, aggregate payments to hospital-based SNFs and nonprofit SNFs would increase considerably, and aggregate payments to freestanding SNFs and for-profit SNFs would decline slightly. Yet, because SNFs are not homogeneous, the effect on individual facilities would vary. Facilities with the highest PPS margins would have the largest reductions in payments; facilities with the lowest PPS margins would have the largest increases in payment. The redistributions would narrow the differences in financial performance across SNFs.

Revised PPS would redistribute payments

Using the NTA and therapy component designs that best predicted costs and a $3,000 fixed-loss outlier policy for ancillary costs per stay, we estimate that a revised PPS design would considerably redistribute Medicare payments.[16] Aggregate payments would be directed away from SNFs with high shares of rehabilitation-only patients and toward SNFs treating high shares of patients requiring extensive services (Table 7-6, p. 188). Aggregate payments to SNFs treating high shares of rehabilitation-only patients would decline 6 percent, whereas aggregate payments to SNFs treating low shares of these patients would increase considerably (17 percent). Likewise, aggregate payments to SNFs treating high shares of patients in extensive services RUGs (patients who received IV medications or suctioning or who received tracheostomy, ventilator, or respirator care) and patients in special care RUGs (patients treated for surgical wounds or skin ulcers or who received radiation therapy) would increase substantially (15 percent and 7 percent, respectively), and aggregate payments to

TABLE 7–6

Revisions to the PPS would increase aggregate payments to some SNF groups and decrease payments to others

SNF grouped by facility characteristic	Share of SNFs	Share of stays	Change in payments under revised PPS relative to current policy
Low share of rehabilitation-only patients	10%	13%	17%
High share of rehabilitation-only patients	10	8	–6
High share of extensive services patients	10	17	15
Low share of extensive services patients	10	6	–4
High share of special care patients	10	6	7
Low share of special care patients	10	7	–4
High NTA costs per day	10	15	23
Low NTA costs per day	10	7	–1
High ancillary costs per day	10	15	21
Low ancillary costs per day	10	7	1
Hospital based	11	19	20
Freestanding	89	81	–2
Nonprofit	27	32	7
For profit	68	64	–3
Government	5	4	7
Rural	32	21	0
Urban	68	79	0

Note: PPS (prospective payment system), SNF (skilled nursing facility), NTA (nontherapy ancillary). Revisions to the SNF PPS include a new NTA component, a revised therapy component, and an outlier policy for stays with exceptionally high ancillary costs. Share of stays is the percent of all Medicare stays treated by that type of facility. Low-share facilities are in the lowest 10th percentile share of cases; high-share facilities are in the top 10th percentile share of cases. Low and high ancillary costs per day (and low and high NTA costs per day) are defined as SNFs in the bottom and top 10th percentiles in ancillary costs (and NTA costs) per day. Rehabilitation-only includes patients grouped into rehabilitation resource utilization groups (RUGs) but excludes patients categorized into the rehabilitation plus extensive services RUGs. Extensive services patients include patients grouped into extensive services RUGs (e.g., patients who received IV medications in the past 14 days or suctioning, or patients who received tracheostomy, ventilator, or respirator care) or in a rehabilitation plus extensive services RUG. Special care patients include patients grouped into special care RUGs (e.g., patients treated for surgical wounds or skin ulcers or who received radiation therapy).

Source: Analysis of 2003 skilled nursing facility claims, cost reports, and DataPro stays conducted for MedPAC by the Urban Institute, 2008.

SNFs treating low shares of these patients would decline by 4 percent. Aggregate payments to SNFs with the highest NTA costs per day (top 10th percentile of NTA costs per day) would increase considerably (23 percent), whereas aggregate payments to those with the lowest NTA costs per day (bottom 10th percentile of costs per day) would decrease by 1 percent.

Under the revised PPS, the shifts in aggregate payments across facility types also reflect the mix of patients treated at different types of facilities and their patterns of providing therapy. A revised PPS would redistribute aggregate payments from freestanding SNFs and for-profit SNFs and to hospital-based SNFs and nonprofit SNFs. Aggregate payments to hospital-based facilities would increase 20 percent, and those to freestanding facilities would decline slightly (2 percent). By ownership, aggregate payments to nonprofits would increase moderately (7 percent) and aggregate payments to for profits would decline 3 percent. Aggregate payments to rural and urban facilities would not change.

Effect of a revised PPS would vary for individual facilities within each SNF group

Although a revised PPS would increase aggregate payments to some groups of SNFs and decrease aggregate payments to others, the effects on individual SNFs would vary depending on their patient mix and treatment patterns. For

TABLE 7–7

Under a revised PPS, changes in payments vary considerably across and within SNF groups

SNF grouped by facility characteristic	Payments lower by >10%	Payments lower by 5 to 10%	Payments lower by 1 to 5%	Percent change −1 to 1%	Payments higher by 1 to 5%	Payments higher by 5 to 10%	Payments higher by >10%
Low share of rehabilitation-only patients	1%	2%	8%	6%	16%	20%	47%
High share of rehabilitation-only patients	26	19	18	11	9	11	6
High share of extensive services patients	3	2	7	5	11	16	55
Low share of extensive services patients	18	20	17	10	12	11	12
High share of special care patients	2	7	14	10	24	21	21
Low share of special care patients	20	16	16	10	14	11	13
High NTA costs per day	1	2	4	2	5	10	76
Low NTA costs per day	13	16	17	12	22	12	8
High ancillary costs per day	6	3	6	3	6	8	68
Low ancillary costs per day	1	12	18	12	31	18	7
Hospital based	1	2	2	3	8	12	73
Freestanding	12	18	22	11	18	13	7
Nonprofit	6	9	13	10	17	16	29
For profit	13	19	23	10	17	10	7
Government	3	6	11	8	16	25	30
Rural	9	13	18	9	18	16	16
Urban	11	17	20	11	17	11	13

Note: PPS (prospective payment system), SNF (skilled nursing facility), NTA (nontherapy ancillary). Revisions to the SNF PPS include a new NTA component, a revised therapy component, and an outlier policy for stays with exceptionally high ancillary costs. Share of stays is the percent of all Medicare stays treated by that type of facility. Low-share facilities are in the lowest 10th percentile share of cases; high-share facilities are in the top 10th percentile share of cases. Low and high ancillary costs (and NTA costs) per day are defined as SNFs in the bottom and top 10th percentiles in ancillary costs (and NTA costs) per day. Rehabilitation-only includes patients grouped into rehabilitation resource utilization groups (RUGs) but excludes patients categorized into the rehabilitation plus extensive services RUGs. Extensive services patients include patients grouped into extensive services RUGs (e.g., patients who received IV medications in the past 14 days or suctioning or patients who received tracheostomy, ventilator, or respirator care) or in a rehabilitation plus extensive services RUG. Special care patients include patients grouped into special care RUGs (e.g., patients treated for surgical wounds or skin ulcers or who received radiation therapy). Rows may not sum to 100 percent due to rounding.

Source: Analysis of 2003 SNF claims and cost reports conducted for MedPAC by the Urban Institute, 2008.

example, the vast majority (83 percent) of SNFs with low shares of rehabilitation-only patients would experience payment increases, whereas payments to a small share (11 percent) of these SNFs would decline (Table 7-7). Similarly, most SNFs treating high shares of patients in the extensive services and special care RUGs would experience payment increases but payments would decline for some of these facilities. Payments would decline for over half of SNFs treating low shares of patients in extensive service and special care RUGs, yet modest shares of these facilities would see large payment increases (at least 10 percent). Payments would increase by at least 10 percent to more than three-quarters of SNFs with high NTA costs per day, yet 1 percent of these SNFs would experience payment declines of a similar magnitude.

Similar differences in payment changes would be seen across SNFs by facility type and ownership. Almost three-quarters of hospital-based SNFs would experience fairly sizable increases in payments (at least 10 percent), and payments to just 1 percent of these SNFs would decline by at least 10 percent. More than one-half of freestanding SNFs would see their payments decline, but payments would increase for more than one-third of them and some (7 percent) would experience fairly large increases (at least 10 percent). Nonprofit and for-profit SNFs would experience similar disparities in changes in payments. Most nonprofit SNFs (62 percent) would see their payment increase by at least 1 percent, many with payment increases of at least 10 percent. However, payments to

TABLE 7–8

Under a revised PPS, changes in payments would be inversely related to actual SNF Medicare margin

SNF margin	Payments lower by >10%	Payments lower by 1 to 10%	Percent change –1 to 1%	Payments higher by 1 to 10%	Payments higher by >10%
Positive margin					
More than 10%	83%	66%	54%	50%	13%
5 to 10%	9	11	10	12	5
0 to 5%	2	7	10	9	4
Negative margin					
0 to –5 %	3	5	9	8	4
–5 to –10%	2	3	3	5	3
Less than –10%	2	6	14	16	70
Total	100	100	100	100	100

Note: PPS (prospective payment system), SNF (skilled nursing facility). Revisions to the SNF PPS include a new nontherapy ancillary component, a revised therapy component, and an outlier policy for stays with exceptionally high ancillary costs. Margins were calculated for 2003, the same year of the simulated nontherapy ancillary and therapy components. Columns may not add to 100 percent due to rounding.

Source: MedPAC analysis of changes in payments simulated by the Urban Institute and 2003 Medicare margins. Analysis includes 3,335 of the 3,647 facilities (91 percent) that were in both data sets.

more than one-quarter of nonprofit SNFs would decline at least 1 percent; for some (6 percent), the decline would be sizable (at least 10 percent). Most for-profit SNFs would experience payment declines, but payments for some (7 percent) would increase at least 10 percent. A larger share of rural facilities would see their payments increase (50 percent) compared with urban facilities (41 percent) under the revised PPS.

Many SNFs would receive small outlier payments

Under a $3,000 fixed-loss outlier policy, outlier payments would be made for a small share of stays that would be broadly distributed across many SNFs, reflecting the random nature of extraordinary costs. Specifically, 2.6 percent of stays distributed over 60 percent of SNFs would qualify for an outlier payment.[17] A slightly larger share of hospital-based SNFs (69 percent) would receive outlier payments compared with freestanding facilities (61 percent).

Yet, only a subset of SNFs (20 percent of freestanding facilities and 28 percent of hospital-based facilities) would, on net, benefit from the outlier policy after their base ancillary payments were lowered to fund the outlier pool. In contrast, most facilities would not recoup the amounts they pay into the outlier pool. The outlier policy would afford a small share of facilities (7 percent) a moderate increase (more than 5 percent) in the ancillary payments. A larger proportion of nonprofit SNFs and hospital-based facilities than other types of SNFs would receive outlier payments of this magnitude.

Payment increases and declines are inversely related to Medicare margins

To gauge the financial impact that changes in payments would have on facilities, we examined the SNF margins of the facilities that would experience the largest changes in payments. Under a revised SNF PPS, most SNFs that would experience the largest changes in payments had the highest and lowest Medicare margins in 2003 (Table 7-8). The vast majority of the SNFs (83 percent) that would experience large declines in payments had margins of at least 10 percent in 2003. Conversely, 70 percent of SNFs that would receive the largest payment increases had the lowest Medicare margins (less than –10 percent) in 2003. Of the facilities that would experience large increases in payments and that had high Medicare margins, most were freestanding and for profit but some (11 percent) were hospital based and one-quarter were nonprofit.

Under a revised PPS, differences in Medicare margins across SNF groups would narrow. Aggregate margins

would change the most for hospital-based SNFs, but most of them would continue to have negative margins. Because the redesigns change only ancillary payments, the very high routine and overhead costs of many hospital-based facilities would continue to affect their financial performance. Aggregate margins for freestanding facilities and for-profit facilities would decline slightly.

Our analyses indicate that, compared with the current system, a revised PPS would more accurately pay for NTA and therapy services and offer SNFs protection against extraordinarily high-cost cases. Because payments would be more accurate, SNFs would have little financial incentive to select certain types of patients and access would improve for beneficiaries who require expensive NTA services. In view of our findings, we recommend that the Congress require the Secretary of Health and Human Services to revise the SNF PPS by adding an NTA component, replacing the existing therapy component with one that bases payments on care needs, and adopting an outlier policy.

RECOMMENDATION 7A

The Congress should require the Secretary to revise the skilled nursing facility prospective payment system by:

- **adding a separate nontherapy ancillary component,**
- **replacing the therapy component with one that establishes payments based on predicted patient care needs, and**
- **adopting an outlier policy.**

RATIONALE 7A

The current PPS design does not accurately pay for patients with high NTA care needs, encourages providers to furnish therapy services for monetary gain, and does not offer financial protection for SNFs against extraordinarily high-cost cases. As a result, SNFs favor certain types of cases over others, which can impair access for some patients.

Our work indicates that a separate NTA component can be designed that substantially improves payment accuracy for these services. A therapy payment component can be designed that predicts therapy costs as well as current policy but bases its payments on the care needs of the patient and not therapy provision. An outlier policy targeting high ancillary costs protects SNFs against extraordinary losses without paying for facility differences that may be unrelated to patients.

IMPLICATIONS 7A

Spending

- This recommendation would not affect federal program spending relative to current law. The changes would be implemented to be budget neutral.

Beneficiary and provider

- This recommendation is expected to improve access for beneficiaries with high-cost care needs.
- The revised PPS will improve the accuracy of payments for individual stays. Payments will increase for some providers and decrease for others depending on their mix of patients and treatment patterns.

Implementing a revised PPS

A revised PPS as described in this chapter—which includes an NTA payment component, bases therapy payments on predicted therapy care needs for each patient, and includes an outlier policy—would improve payment accuracy but impose changes on providers and CMS. The revised therapy component would create an incentive to stint on therapy care rather than overprovide services. CMS could temper this incentive in two ways: by adopting a pay-for-performance policy to encourage optimal patient outcomes and by paying for therapy services on the basis of costs for stays with therapy costs considerably below average. The PPS revisions would not require facilities to gather any new data but would require them to obtain diagnostic information from the referring hospital. CMS would need to make several changes to its current operations, similar to those it makes when implementing or revising a PPS.

Preventing undesirable SNF responses to a revised PPS

Certain features of the revised PPS that would improve the accuracy of payments may also create opportunities for SNFs to change their practices in ways that will not necessarily benefit patients. Most notably, under the revised PPS design, SNFs would be paid for the predicted amount of therapy care a patient needs, even if they provide fewer services. Like any prospectively determined payment, the redesign creates a financial incentive for SNFs to underfurnish services—in this case, therapy services. CMS could lower the risk of stinting on therapy services in two ways. First, Medicare could tie a portion of its payments to quality measures. This year,

the Commission recommended that Medicare implement pay for performance for SNFs and noted that changes in a patient's functional status would be a good indicator to include in the measure set (MedPAC 2008b). For measures to accurately reflect the care furnished to short-stay patients, SNFs must be required to assess patient outcomes at admission and discharge, which the Commission has repeatedly recommended (MedPAC 2008b, MedPAC 2006, MedPAC 2005b).

A second way to lower the risk of underproviding services is to pay for therapy on a cost basis for stays with unusually low therapy costs. The PPS for home health care has a low utilization payment adjustment (LUPA) whereby home health agencies are paid on a per visit basis when a 60-day episode (its unit of payment) includes fewer than 5 visits.[18] A LUPA policy for SNFs could pay facilities for therapy services on a cost basis when a stay's therapy costs were well below the predicted costs. Similar to the outlier policy, CMS would identify unusually low therapy costs over the course of a stay, not on a per day basis, as therapy may not be provided as predicted on a given day for reasons that would not constitute stinting.

The redesigned PPS does not alter the prospectively set payments for the nursing and other services components. Facilities will continue to have a financial incentive to keep these components' costs below their payments. As with any PPS for a bundled service, this can result in facilities underproviding nursing services. A pay-for-performance program that uses outcome measures that are sensitive to the amount of nursing provided to patients should, if enough dollars are at stake, discourage providers from stinting on these services. The two measures the Commission has recommended for pay for performance—rates of community discharge and rehospitalization—are sensitive to nurse staffing levels.

The indicator for IV medications would improve payment accuracy but, if inaccurate, could create a financial incentive for SNFs to furnish unnecessary IV medications if the payment adjuster raises payments too high relative to costs. As long as the payment adjuster is accurate, the financial incentives to select certain patients or to furnish specific services will be minimized. Although excluding the predictor from the PPS design would eliminate the potentially inappropriate incentive, payments are likely to be less accurate without it, which would also create incentives for SNFs to selectively admit patients.

It is critical that CMS monitor provider behavior to assess whether there are mismatches between costs and payments for the stay and patient predictors included in the NTA and therapy component designs. It is important for CMS to periodically recalibrate the weights associated with each predictor so that payments continue to accurately reflect treatment costs and practice patterns.

Proposed PPS revisions do not require additional data collection

The proposed PPS revisions do not require providers to gather any new information (Table 7-9). The information is either currently collected by SNFs or hospitals or is calculated by CMS.

The SNF care variables (whether patients received IV medications or respiratory care) and diagnosis information from the prior hospital stay would require additional work by CMS and SNFs to implement. To "confirm" that the services were furnished in the SNF (and not during the prior hospital stay), information about the use of IV medications and respiratory care requires a match between the patient assessment and a SNF claim.[19] Modifications to the Minimum Data Set (MDS) would eliminate the need for this step. Although transferring diagnostic information from the hospital to the SNF adds an administrative task for both settings, communicating this information is key to quality patient transitions and should occur for every patient. CMS has the diagnostic information from hospital claims, but there could be timing problems between when CMS receives and adjudicates a hospital claim and when a SNF submits a bill for a stay.

The transfer of information between SNFs and hospitals highlights the need for information technology industry wide. CMS is conducting a demonstration to test a uniform patient assessment instrument that gathers and transmits this information from the hospital to post-acute settings, but its results are not expected until at least 2011. The use of hospital diagnoses underscores the need for SNF claims to include accurate diagnosis codes (see p. 194).

Changes required of CMS and providers

A revised PPS would require CMS to make several changes to its current operations, consistent with those it makes when implementing or revising any PPS. The NTA and therapy payment component designs would require CMS to:

- recalculate the nursing base rate after removing NTA costs from the rate, establish an NTA component, and modify how total payments are calculated (summing four components instead of three);

- revise the therapy rate calculation;
- modify the cost report;
- merge diagnosis information from the patient's preceding hospital stay (until SNF claims include more accurate information); and
- notify and educate providers about the PPS revisions.

Introducing an outlier policy would also add steps to determining facility payments, consistent with methods used to calculate outlier payments in the psychiatric hospital PPS. Outlier cases would need to be identified by calculating per stay ancillary costs (by summing the ancillary charges for a stay and converting the charges to costs using each facility's ratio of charges to costs) and comparing the costs with the fixed-loss amount adjusted by each facility's area wage index. Because outlier status cannot be determined until after the stay is complete, outlier payments could be made only at the end of the SNF stay.

A LUPA policy for therapy services would require CMS to compare the predicted therapy costs of a stay (from the therapy payment component) with the stay's actual therapy costs (calculated from the steps to determine a case's outlier status). CMS would need to define a threshold ratio of actual-to-predicted costs, below which stays would be paid on a cost basis for the therapy services they furnished. For example, if a stay's actual therapy costs were 20 percent of the predicted costs, the therapy payment would be based on the stay's actual costs. As with the outlier policy, CMS would need to determine LUPA payments at the end of the stay.

The revised PPS would require CMS to educate providers about the NTA and the revised therapy components and the LUPA and outlier policies. If the MDS were modified to identify the SNF-provided services, facilities would have to train their assessors on how the assessment tool's questions had changed. SNFs would need to ensure that they had mechanisms in place to receive diagnosis information from hospitals about incoming patients.

Transitional policies can ease major changes to a payment system. In the case of a revised SNF PPS, if a transition period is used, it should be short (less than three years), during which time CMS would pay facilities based on a blend of "old" and "new" systems. A short transition period would hasten the ability of the PPS to pay SNFs appropriately. Most SNFs that would experience large payment reductions had high Medicare margins, whereas most SNFs whose payments would increase by more than 10 percent had negative margins.

We appreciate the competing demands on CMS's time and its limited resources to implement the required changes. However, we believe the work required to make the changes is outweighed by having a PPS that would establish more accurate payments and offer facilities some financial protection from exceptionally costly stays. Because payments would more closely track provider costs, the revisions would enhance access for patients with high care needs and eliminate the incentives of the current system to avoid these patients.

TABLE 7–9

Revised PPS designs use currently available data

Predictor	Data collection effort
Activities of daily living Physical and mental status MDS assessment indicator Patient had a prior nursing home stay	Collected by the MDS
Intravenous medication use in SNF Respiratory care in SNF	Collected by the MDS and SNF claims; requires CMS to confirm that services were furnished during the SNF stay (and not during the preceding hospital stay). Modifications to MDS would eliminate this step.
Broad RUG category Rehabilitation indicator	Collected by the MDS. Calculated by CMS; no additional effort.
Diagnostic information from prior hospital stay	Collected by hospitals; requires hospitals to transfer information to the SNF and CMS to merge hospital and SNF information.

Note: PPS (prospective payment system), MDS (Minimum Data Set), SNF (skilled nursing facility), RUG (resource utilization group).

Source: MedPAC analysis of data elements required by PPS redesigns modeled by the Urban Institute.

Better data would enhance PPS payment accuracy and evaluation

Additional information that is currently not available about SNF care would enhance the accuracy of payments and the ability to evaluate the value of the care furnished. Three improvements are discussed here: obtaining accurate SNF diagnostic information, recording the services furnished since admission to the SNF (and the date of service), and gathering nursing cost information.

Accurate SNF diagnostic information

The Commission previously noted that accurate information about patient diagnoses and comorbidities would facilitate categorizing patients into case-mix groups with similar care needs (MedPAC 2007b). More complete information would also help adjust for differences in patient mix across facilities when comparing costs, payments, and outcomes. Freestanding SNFs often do not code secondary diagnoses, whereas hospital-based facilities frequently use a general rehabilitation diagnosis code that does not convey sufficiently specific information about the patient (Urban Institute 2007). SNF claims have fields for recording specific diagnosis codes but the data are not required for payment.

Concurrent with the adoption of payment components that use diagnosis information to establish payments, diagnosis fields on SNF claims should become required fields. SNFs should use the full five-digit International Classification of Diseases, Ninth Revision, Clinical Modification (ICD–9–CM) codes to describe the principal diagnosis and comorbidities of each patient stay. If CMS instructed its claims contractors to reject claims without this information, providers would quickly comply with the requirement.[20] As this information becomes available on SNF claims, the predictive models used by the NTA and therapy components could use these data. Under the revised PPS, SNFs would have a financial incentive to include diagnosis codes on their claims. Therefore, CMS will need to monitor changes in case mix as recorded on the SNF claims and assess the portion that reflects real changes in the complexity of cases treated.

Services furnished by SNFs

CMS also needs better information about the services furnished during a patient's SNF stay so that payments are accurate. The existing MDS patient assessment tool requires SNFs to report on NTA services provided during a look-back period of 14 days that, for a patient's first assessment (on or about day 5 of the stay), can include services provided during the preceding hospitalization. In comparing NTA service information from the patient assessment and SNF claims, researchers found that almost half the stays indicated the patient's use of IV medication but few SNF claims had charges for the services. The researchers concluded that the services were either furnished during the prior hospital stay or were low-cost services that facilities did not consistently report (Urban Institute 2007).

Although a July 2007 version of the revised MDS distinguished services furnished in the past five days from those provided since admission to the SNF, a more recent draft version of the revised MDS did not retain this distinction. Instead, the January 2008 draft version reverted to the existing requirement for SNFs to report services furnished during the past 14 days. This look-back period will continue to preclude distinguishing between services furnished since admission to the SNF and those furnished during the prior hospital stay. In a comment letter to CMS, the Commission urged the agency to fix this problem in the revised MDS (MedPAC 2008a).

Better information about when services were provided would also help predict daily costs more accurately and could be used to assess the value of services. SNFs typically bill for services on a monthly basis and claims include the numbers of units furnished but not the dates of service. To estimate daily costs, per stay costs are averaged over the number of days in the stay, even though higher costs could be incurred early in the stay. For patients whose care needs change throughout a stay, it is difficult to accurately apportion patient costs to each day. In addition, dates of service would allow costs to be linked to patient assessment information.

Nursing costs

Accurate nursing cost information is key to measuring cost differences in care needs across patients. CMS gathers staff times on individual patients that are used to establish the nursing component relative weights. These studies are expensive to administer and therefore are undertaken only periodically with a sample of facilities. Since the PPS was implemented in 1998, CMS has collected these data only once and the study's results are not expected until later this year. CMS will need to carefully examine the representativeness of the study's stays and facilities before it uses the information to update the payment weights for Medicare payments.

CMS needs facility-level nursing cost information so that it can evaluate the relationships among case mix, costs,

quality, and staffing. Many Medicaid cost reports require this information. In 2004, the Commission recommended that the Secretary require SNFs to report nursing costs separately from routine costs in the SNF Medicare cost report (MedPAC 2004). It would be useful to have this information categorized by type of nurse (registered nurse, licensed practical nurse, and nurse aide), which most facilities' payroll systems can report.

In addition to better facility-level cost data, CMS needs a relatively easy way to estimate the nursing costs of individual patients. Using administrative data would allow CMS to routinely recalibrate the nursing weights used to establish payments, thereby keeping Medicare's payments accurate. One idea to explore is for nursing homes to use an expanded set of service codes to bill for nursing services. Different daily service codes and charges could reflect different levels of nursing services. For example, facilities could use separate billing codes to reflect daily nursing services provided to long-stay patients, post-acute patients, and patients with special care needs (e.g., being weaned from a ventilator or having wound dressings changed). With different levels of nursing care reflected in a patient's claim, charges (which could be converted to costs) could be used to establish the relative weights associated with each case-mix group. CMS uses charges to update the relative weights in other PPSs.

To improve the accuracy of the payment system, CMS needs better data about the patients treated in SNFs and the services furnished to them. SNF claims need to include diagnostic information and the dates when services were furnished to patients. The MDS needs to distinguish services furnished by the SNF from those provided during the prior hospitalization. Because nursing care is a key component of the services a patient receives, facilities need to report their nursing costs separately from routine costs in their Medicare cost reports.

RECOMMENDATION 7B

The Secretary should direct skilled nursing facilities to report more accurate diagnostic and service-use information by requiring that:

- **claims include detailed diagnosis information and dates of service,**
- **services furnished since admission to the skilled nursing facility be recorded separately in the patient assessment, and**
- **skilled nursing facilities report their nursing costs in the Medicare cost reports.**

RATIONALE 7B

Establishing accurate payment rates and understanding differences across patients and SNFs requires better clinical and service-use information. These data would also allow the value of SNF care to be assessed. The data could be used to improve risk-adjustment methods so that payments could be accurately predicted and compared across SNFs and patients.

IMPLICATIONS 7B

Spending

- This recommendation would not affect federal program spending relative to current law.

Beneficiary and provider

- This recommendation would not directly affect beneficiaries but could improve access if the data resulted in more accurate payments.
- Providers would incur modest expenses to report the data included in this recommendation. Most facilities' payroll systems can report payroll expenses by nursing category and many states' Medicaid cost reports require providers to report nursing costs. SNFs would have to train patient assessors on changes to the questions in the revised MDS. SNFs would have to learn to use the ICD–9–CM coding scheme to accurately report the active medical conditions of their patients. More accurate diagnosis coding could increase payments to some providers and decrease payments to others.

CMS would need to make several changes to gather the additional data items. The Medicare cost report would need to be revised to include nursing cost information. Revised MDS forms and manuals would need to be produced and providers made aware of the changes. The July 2007 version of the MDS includes revised questions that ask about services furnished by the SNF. The SNF claims do not need to be modified; there is already space on them for diagnosis codes, service codes, and dates of service. ■

Endnotes

1 Urban and rural SNFs have separate base rates, which are adjusted for differences in labor costs.

2 Under the original case-mix groups, patients requiring both therapy and extensive services were grouped into rehabilitation RUGs because the classification system is hierarchical and the payments associated with rehabilitation RUGs were higher than those associated with extensive services RUGs.

3 Under the current PPS, some facilities appear to furnish just enough therapy services to classify patients into the highest possible case-mix group. A comparison of the minutes of therapy patients received and the minimum number of minutes required to be classified into a case-mix group found that patients often receive the minimum amount of therapy to qualify for a payment group. Some patients do not receive even the minimum because an estimate of the minutes a patient will receive can be used to qualify them for certain case-mix groups (GAO 2002). CMS reported that in 2003 fewer patients received the minimum qualifying minutes than when the PPS was implemented, but the pattern persists (CMS 2006).

4 Variables in the New Profiles and the RUG–58 + service index models were evaluated (MedPAC 2007b, Urban Institute 2007).

5 Broad RUG categories include rehabilitation, rehabilitation and extensive services, extensive services, special care, and clinically complex.

6 The number of assessments conducted on a patient was used as a proxy for length of stay. Nursing homes are federally required to assess each patient's functional, mental, and behavioral status at set intervals throughout a patient stay using the Minimum Data Set. The number of assessments conducted on a patient increases with the length of the stay.

7 We used patient assessment variables from the Minimum Data Set 2.0. When this assessment tool is updated, the design will be revised to include measures from the most current version. Key factors—such as a patient's physical and mental status, ability to perform activities of daily living, and certain service use—are likely to continue to be important in explaining cost differences across patients. We do not expect such substitutions to significantly change our conclusions.

8 Freestanding SNFs use the International Classification of Diseases, Ninth Revision, codes much less frequently than hospital-based SNFs. As a result, measuring case mix using SNF claims would "shortchange" freestanding SNFs. In addition, hospital-based SNFs regularly use very general rehabilitation diagnosis codes that do not include much information.

9 The accuracy of each design was evaluated by comparing its estimated per day costs with the actual costs per day. Actual costs were calculated by converting charges on SNF claims (using 2003 data) to costs using cost-to-charge ratios (CCRs) derived from each facility's Medicare cost report. For each facility, separate CCRs were calculated for drugs, respiratory therapy, rehabilitation therapy, and other NTA services when data were available. When data were missing, the CCR for the next higher level of service aggregation was used. For example, the CCR for total NTA services was used if data were not available to calculate a CCR for drugs.

10 Certain variables (HIV or organ transplant diagnosis from the hospital stay) were kept in the models even though they describe few cases. However, excluding them would decrease the model's ability to predict resource use for those patients and the facilities that treat them. Many variables were examined but dropped because they did not contribute significantly to the explanatory power of the models. Dropped variables included: the activity of daily living measuring a patient's ability to transfer to and from bed, chair, and standing position; the share of SNF stays with prior hospital stays with high severity of illness (scores of 3 or 4); high drug charges in the prior hospital stay; radiology charges in the prior hospital stay; speech–language pathology charges in the prior hospital stay; rehabilitation therapy charges in the prior hospital stay; and a composite measure for activities of daily living (the Barthel index score).

11 We distinguish between the CMI coefficient of the payment system design and the CMI for a given facility.

12 A coefficient greater than 1.0 is sometimes referred to as CMI compression, whereas a CMI less than 1.0 is known as CMI decompression.

13 The three elements—fixed loss amount, pool size, and loss ratio—are interrelated. For a given loss ratio, a large pool size means that cases with smaller losses will qualify for an outlier payment. A fixed loss amount determines the pool size by identifying the cases that qualify. When the pool size has been set, the loss-sharing ratio affects the fixed loss amount because the upper limit on outlier spending has been capped. Setting the share of costs paid above the threshold amount and the upper limit on outlier spending will determine the fixed loss amount.

14 To keep the share of the daily rate that is adjusted for differences in wages the same as existing policy, we adjusted the NTA, therapy, and nursing base payments for differences in area wages using the 2003 labor-related share. Drugs and supplies are not included in the share of costs that is adjusted for differences in wages.

15 Although consistent with outlier policies of other PPSs, the 80 percent loss-sharing ratio may be high. Our analysis of the outlier policy parameters for inpatient hospitals found that 80 percent was likely to overstate marginal costs. For a discussion of the Commission's analysis of inpatient hospital marginal costs, see http://www.medpac.gov/transcripts/1003-04medpac.final.pdf. To more accurately reflect the lower daily costs of longer stays, another refinement to consider is a loss-sharing ratio that declines after the median length of stay. The psychiatric hospital PPS outlier policy includes two loss-sharing ratios that vary according to day of stay.

16 The best predictive NTA and therapy designs include the patient and stay characteristics listed in Table 7-1, the diagnostic information from the preceding hospitalization, a broad RUG indicator, and whether the patient received IV medications.

17 The shares of cases and facilities that would receive an outlier payment are very similar to the shares that would receive one if an outlier policy were included with current policy.

18 The PPSs for long-term care and rehabilitation hospitals establish separate payments for unusually short stays. The acute inpatient PPS reduces payments when patients have short stays and are transferred to another hospital covered by the acute hospital PPS or, for stays grouped into 182 case-mix groups, are discharged to a post-acute care setting.

19 The researchers at the Urban Institute previously found that the MDS variable alone was an unreliable indicator of NTA services in the SNF. This is because the MDS questions about NTA use refer to services patients received in the past 14 days. Depending on when the assessment is conducted, this "look-back period" can include services provided at the hospital. This step would not be needed if the MDS were modified to gather information about NTA services provided during the SNF stay. In addition, the match appears to indicate high NTA use. Patients with both a claim and indication in the MDS for the service had above-average NTA costs.

20 When CMS needed revenue codes from outpatient therapy providers to operationalize the therapy caps, its contractors rejected claims without revenue codes; within a year, most claims contained this information.

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