

CHAPTER

6

**Site-neutral payments for select
conditions treated in inpatient
rehabilitation facilities and
skilled nursing facilities**

Site-neutral payments for select conditions treated in inpatient rehabilitation facilities and skilled nursing facilities

Chapter summary

Site-neutral payments reflect the Commission's position that the program should not pay more for care in one setting than in another if the care can safely and effectively be provided in a lower cost setting. The Commission has examined inpatient and outpatient services for which the program pays different rates depending on the site of service and has made recommendations to lower or eliminate price differences.

In this chapter, the Commission focuses on site-neutral payment to post-acute care (PAC) facilities—namely inpatient rehabilitation facilities (IRFs) and skilled nursing facilities (SNFs)—that are paid under separate payment systems. The Commission compares payments for three conditions frequently treated in both settings. Because there is some overlap in the patients treated in both settings, yet payments can differ, there is an opportunity to develop site-neutral policies that eliminate unwarranted payment differences. The Commission is not alone in its interest in aligning payments between IRFs and SNFs. Since 2007, proposed budgets under presidents from both parties have included proposals to narrow prices between IRFs and SNFs for select conditions commonly treated in both settings.

The services typically offered in IRFs and SNFs differ in important ways. IRFs are required to meet the conditions of participation for acute care hospitals, including having more nursing resources available and having care

In this chapter

- Background on Medicare's payments to IRFs and SNFs
- Possible conditions for site-neutral payments
- Similarity of patients treated in IRFs and SNFs
- Outcomes for patients with one of the three conditions are mixed, with risk-adjusted measures indicating small or no differences between IRFs and SNFs
- Impact of SNF payments on IRFs
- Options for waiving current IRF requirements
- Conclusion

supervised by a rehabilitation physician, among other requirements. Stays in IRFs are shorter on average, and patients in IRFs receive more intensive services, in part because patients admitted must be able to tolerate and benefit from an intensive therapy program. The Commission recognizes that the services in the two settings differ; however, we question whether the program should pay for these differences when the patients admitted and the outcomes they achieve are similar.

Using several criteria, we selected three conditions frequently treated in IRFs and SNFs—patients receiving rehabilitation therapy after a stroke, major joint replacement, and other hip and femur procedures (such as hip fractures)—and assessed the feasibility of paying IRFs the same rates as SNFs for these conditions. We examined the characteristics of patients admitted to SNFs and IRFs—including patients’ risk scores, ages, comorbidities, functional status at admission, predicted costs for therapy and nontherapy ancillary services (such as drugs), and shares of dual-eligible and minority beneficiaries—and did not find large differences in the patients with the orthopedic conditions. There were larger differences among the stroke patients. In general, SNF patients were more likely to have some characteristics that might raise their care needs (such as a history of falls or no sitting endurance), while IRF patients were more likely to have others (such as swallowing impairments or communication impairments).

We examined four outcome measures: hospital readmission rates, change in function (mobility and self-care), mortality rates, and spending in the 30 days after discharge from the SNF or IRF. Differences in outcomes between IRFs and SNFs were mixed: Risk-adjusted measures generally indicated small or no differences between the settings, while unadjusted measures showed larger differences between the settings. CMS’s Post-Acute Care Payment Reform Demonstration found no statistically significant differences between the sites in their risk-adjusted readmission rates, while IRFs had lower unadjusted readmission rates compared with SNFs for the three conditions. Regarding changes in function, IRFs and SNFs had similar risk-adjusted changes in mobility, but IRFs had greater improvement in patients’ self-care compared with patients treated in SNFs. The unadjusted mortality rates during the 30 days after discharge were higher for patients with the select conditions who went to SNFs compared with patients who went to IRFs. By condition (with no further risk adjustment), spending in the 30 days after discharge was higher for IRF patients than for SNF patients, due primarily to higher spending on other PAC services such as SNF and home health care.

For the three conditions, we compared Medicare’s IRF “base” payments in 2011 with what those payments would be if paid under SNF payment policy. Base payments exclude the “add-on” payments made to those IRFs that have a teaching

program, treat low-income patients, or have high-cost outlier cases. We found that if IRFs were paid under 2014 SNF policy, their aggregate payments for the three select conditions would decline. We also compared IRF base payments with those that would be made under the alternative SNF prospective payment system (PPS) design the Commission recommended in 2008 and found similar reductions to the IRFs' base payments. Under the policy design we explored, the industry-wide impact on total payments would be mitigated because IRFs would continue to receive IRF PPS payments for the majority of their cases and the site-neutral policy would not change the add-on payments many IRFs receive for the select conditions. The impact of this policy was consistent across different types of IRFs. Although certain types of providers have higher shares of site-neutral cases, they also tend to have higher add-on payments that dampen the impact of a site-neutral policy.

If payments for select conditions were the same for IRFs and SNFs, the Commission believes that CMS would need to evaluate waiving certain regulations for IRFs when treating site-neutral cases to level the playing field between IRFs and SNFs. For the site-neutral conditions, CMS could consider waiving requirements such as requiring that patients are able to tolerate and benefit from an intensive therapy program (often demonstrated by furnishing three hours of therapy a day) and receive frequent physician supervision (often satisfied by physician face-to-face visits at least three days a week). Waiving certain IRF regulations would allow IRFs the flexibility to function more like SNFs when treating those cases. Our examination also reinforces the Commission's concern that some of the definitions of cases meeting the IRF compliance thresholds are too broad.

Selecting three conditions to study allowed us to explore a "proof of concept" of site-neutral payments between IRFs and SNFs. We found that the patients and outcomes for the orthopedic conditions were similar and represent a strong starting point for a site-neutral policy. Patients receiving rehabilitation care after a stroke were more variable, and we conclude that additional work needs to be done to more narrowly define those cases that could be subject to a site-neutral policy and those that could be excluded from it. ■

Introduction

Medicare needs to shift its fee-for-service (FFS) payments toward integrated payment and delivery systems. New payment models, such as accountable care organizations (ACOs) and CMS's bundling initiatives, encourage providers to consider the most cost-effective site of post-acute care (PAC) to lower per episode or per beneficiary spending. At the same time, FFS methods remain important because they establish incentives (and disincentives) for providers, underlie many payment reforms, and will remain an option for providers and beneficiaries for the foreseeable future.

The Commission began its site-neutral payment inquiry with ambulatory services. In 2012, the Commission recommended that Medicare's payments for evaluation and management services (an "office visit") should be the same, regardless of whether the beneficiary was seen in the physician's office or in a hospital-based clinic (Medicare Payment Advisory Commission 2012). In 2014, the Commission expanded the concept of site-neutral payments to a set of 66 ambulatory services, and it recommended eliminating price differences for similar services and narrowing the prices paid for services with differences in the package of services covered by the payment (Medicare Payment Advisory Commission 2014). The Commission also applied the site-neutral concept to long-term care hospitals (LTCHs) and recommended that Medicare's payments to LTCHs should be the same as those made to acute care hospitals for patients who are not chronically critically ill (Medicare Payment Advisory Commission 2014).

Site-neutral payments stem from the Commission's position that the program should not pay more for care in one setting than in another if the care can be safely and efficiently (that is, at low cost and with high quality) provided in a lower cost setting. As a prudent purchaser protecting the taxpayers' and beneficiaries' interests, Medicare should base its payments on the resources needed to treat patients in the most efficient setting, adjusting for patient severity differences that could affect providers' costs.

This chapter explores the idea of applying the site-neutral concept to PAC services for conditions frequently treated in two PAC settings—inpatient rehabilitation facilities (IRF) and skilled nursing facilities (SNF). The Commission recognizes that the services in the two settings differ. The interdisciplinary focus and intensity of

services furnished in IRFs make them appropriate settings to treat patients with especially complex care needs, such as patients receiving rehabilitation care after severe strokes or brain or spinal cord injuries. However, the Commission questions whether the program should pay for differences in the intensity of services for those patients who appear to be similar to patients admitted to SNFs and who achieve similar outcomes.

We examine the possibility of paying IRFs the rates paid to SNFs when treating similar beneficiaries receiving services after a hospital stay. Eliminating the payment differences between the two settings represents a small step toward establishing payments across PAC settings based on patient characteristics rather than on where patients are treated. Beyond FFS, the findings could inform ACOs, Medicare Advantage (MA) plans, and private insurers about their enrollees' use of SNF and IRF services for the conditions we studied.

The Commission is not alone in its interest in rationalizing payments between IRFs and SNFs. Since 2007, proposed budgets under presidents from both parties have included proposals to narrow prices between IRFs and SNFs for select conditions commonly treated in both settings. In fiscal year 2015, the proposal calls for adjusting IRF payments for conditions involving hips and knees, pulmonary conditions, and any other conditions selected by the Secretary. CMS estimated this proposal would yield \$110 million in savings for 1 year and \$1.6 billion over 10 years.

To consider site-neutral payments between IRFs and SNFs, we selected three conditions, using the typology the Commission has applied in considering site-neutral payments in other settings (Medicare Payment Advisory Commission 2014, Medicare Payment Advisory Commission 2012)—patients receiving rehabilitation care after a stroke, major joint replacement, and other hip and femur procedures (such as hip fractures). We compared demographic and clinical characteristics of the patients treated in IRFs and SNFs to evaluate whether the patients were similar, compared the outcomes of the patients treated in each setting, estimated the impact on Medicare's payments to IRFs if they were paid SNF rates for these conditions, and estimated the impact on total IRF payments. Our analysis compares base payments to IRFs under three scenarios: 2014 IRF payment policy, payments if IRFs were paid the 2014 SNF prospective payment system (PPS) rates, and payments in 2014 if IRFs were paid under a MedPAC-recommended alternative SNF PPS design. The analysis does not consider changes to the additional payment adjustments that many IRFs

**TABLE
6-1****Payments to IRFs were generally, but not always, higher than those to SNFs for select conditions in 2011**

Condition (acute hospital MS-DRG)	SNF payment	Total IRF payment	Ratio of IRF to SNF payment	IRF base payment	Ratio of IRF base payment to SNF payment
Stroke with MCC (64)	\$15,627	\$22,159	1.42	\$19,897	1.27
Stroke with CC (65)	15,873	20,864	1.31	19,022	1.20
Stroke without CC (66)	13,788	18,300	1.33	16,866	1.22
Major joint replacement with MCC (469)	13,738	17,000	1.24	15,627	1.14
Major joint replacement without MCC (470)	9,843	13,821	1.40	12,936	1.31
Hip & femur procedures with MCC (480)	17,523	18,903	1.08	17,197	0.98
Hip & femur procedures with CC (481)	17,646	17,406	0.99	16,167	0.92
Hip & femur procedures without CC (482)	16,643	16,588	1.00	15,440	0.93

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), MS-DRG (Medicare severity-diagnosis related group), MCC (major complication or comorbidity), CC (complication or comorbidity). SNF payment and total IRF payment are program payments. Total IRF payments include the additional payments many IRFs receive for teaching programs, treating low-income patients, or having high-cost outlier cases. Base payments exclude the additional payments. Both IRF base payments and SNF payments include adjustments for the facility's wage index and whether the facility is located in a rural area. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting.

Source: Analysis of 2011 SNF and IRF Medicare Provider Analysis and Review data conducted for MedPAC by the Urban Institute.

receive for having a teaching program, treating low-income patients, and having high-cost outlier cases. In establishing the same payments for IRFs and SNFs for select conditions, the Commission also believes CMS should consider waiving some of the regulations for IRFs to level the playing field between IRFs and SNFs.

Background on Medicare's payments to IRFs and SNFs

Medicare pays for patients admitted to SNFs on a per day basis. For the vast majority of days (over 90 percent), payments vary in large part by the amount of rehabilitation therapy a patient receives and a patient's ability to perform activities of daily living.¹ The patient classification system uses a handful of diagnoses to assign days to resource utilization groups for medically complex patients.² There are no additional payments for facilities having a teaching program or treating low-income patients or high-cost outlier cases. Base payments to rural and urban facilities differ, and payments are adjusted for differences in wages across areas.

In contrast, for patients admitted to IRFs, Medicare pays on a per discharge basis. IRF patients are classified

into case-mix groups based on the patient's relatively broad primary reason for rehabilitation care (e.g., stroke, neurological disorder, hip fracture), age, and level of functional impairment at admission.³ Within case-mix groups, patients are further categorized into one of four payment tiers based on the presence of certain comorbidities that have been identified as increasing the cost of care.⁴ Payments per discharge are adjusted for the facility's wage index and whether the facility is located in a rural area. Unlike SNFs, IRFs may also qualify for additional payments per discharge—which we refer to as “add-on payments” here—for having a teaching program, treating low-income patients, or having high-cost outlier stays.⁵

IRFs must comply with the 60 percent rule, which requires that at least 60 percent of all cases an IRF admits have at least one of 13 conditions that CMS has determined to typically require intensive rehabilitation therapy.⁶ The intent of the 60 percent rule is to distinguish IRF care from acute hospital care, identifying patients who would benefit from this intensive rehabilitation setting. Cases can qualify based on the diagnosis codes for the primary condition or certain comorbidities. Stroke, hip fracture, and a subset of joint replacement conditions are among the 13 qualifying conditions. However, most of the clinical conditions are defined broadly. Of the 13 conditions, only hip and knee

**TABLE
6-2**

For the three selected conditions, stays in IRFs were much shorter than those in SNFs, 2011

Condition	Average length of stay (in days)	
	SNF	IRF
Stroke with CC	25	15
Major joint replacement without MCC	15	10
Hip & femur procedures with CC	32	14

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), CC (complication or comorbidity), MCC (major complication or comorbidity). The illustrative conditions were patients receiving rehabilitation care after stroke with CC (MS-DRG (Medicare severity-diagnosis related group) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting.

Source: Analysis of 2011 SNF and IRF Medicare Provider Analysis and Review data conducted for MedPAC by the Urban Institute.

replacement and arthritis categories detail specific clinical factors that limit which cases count toward the 60 percent rule (e.g., counting only joint replacements for patients who are over 85 years old or are obese or who underwent bilateral procedures).

Differences in Medicare payments to IRFs and SNFs for select conditions

To compare program spending for SNF and IRF care, we converted the day-based SNF payments to stay-based payments by summing the program's payments across the SNF stay. We used Medicare severity-diagnosis related groups (MS-DRGs) to identify patients treated in IRFs and SNFs for similar conditions. In 2011, total Medicare payments (including the add-on payments made to many IRFs for teaching programs, share of low-income patients, and high-cost outlier cases) for three conditions commonly treated in IRFs and SNFs ranged from 42 percent higher in IRFs than SNFs for stroke with major complication or comorbidity (MCC) to about the same for hip and femur procedures (such as hip fracture) (Table 6-1). The differences were larger for some subgroups (not shown) of joint replacement patients, such as those receiving rehabilitation care after total hip replacement (47 percent higher) or knee replacement (49 percent).

The difference in payments for hip and femur procedures between IRFs and SNFs is small and reflects two factors. First, the average length of stay in SNFs for these patients is long (Table 6-2), which results in higher payments compared with payment rates for other SNF conditions. Second, patients receiving rehabilitation care after these

procedures in IRFs have low relative resource use and length of stay compared with other conditions, which results in lower IRF payment rates compared with rates for other IRF conditions, such as stroke. The combination of relatively high payments in SNFs and relatively low payments in IRFs leads to a narrow difference in payment for hip and femur procedures between the two settings.

Overall, the stays of beneficiaries treated in IRFs are much shorter than stays in SNFs (Table 6-2). Table 6-2 shows a comparison of stays for three MS-DRGs representing the select conditions, but these patterns hold across broader definitions of these conditions represented by the eight MS-DRGs displayed in Table 6-1.⁷ Differences in comorbidities (as measured by hierarchical condition category, or HCC, scores) would not fully explain these differences in lengths of stay (Table 6-5, p. 105). One study of joint replacement patients concluded that neither setting has a clear advantage regarding rehabilitation efficiency—the change in function per day and per payment (Tian et al. 2012). IRFs have length-of-stay efficiency that beneficiaries may prefer because they typically would be discharged sooner, while SNFs are typically paid less than IRFs, which payers may prefer.

SNFs and IRFs differ in the services they furnish

SNFs and IRFs differ in the mix of services they furnish. Compared with SNFs, IRFs have more extensive requirements regarding the amount of therapy and the frequency and level of medical supervision their patients receive. IRF patients are expected to tolerate and benefit

from intensive therapy, often demonstrated by IRFs furnishing at least two therapy modalities for three hours a day, five days a week. IRFs also must use a coordinated interdisciplinary team approach to care, led by a physician, and the rehabilitation services must be supervised by a rehabilitation physician through face-to-face visits at least three days a week. IRFs must also meet all conditions of participation for acute hospitals, including 24-hour nursing availability, and patients must meet medical necessity criteria.

In comparison, SNF patients assigned to the highest rehabilitation case-mix groups receive 720 or more minutes a week of therapy (2.4 hours for 5 days a week) and use one therapy modality 5 days per week and a second modality 3 days per week. Services in SNFs are not necessarily supervised by a rehabilitation physician, and registered nurses are not required to be onsite around the clock. SNFs are required to coordinate their care using interdisciplinary teams that include, but are not necessarily led by, physicians. For SNF stays to be covered by Medicare, physicians must certify at admission that the beneficiary requires daily skilled services. Recertifications must also be done at day 14 and at least every 30 days thereafter, which nurse practitioners or physicians' assistants can conduct.

The differences in requirements by setting may affect referral patterns for patients with complex medical care needs. Patients who require additional nursing services (such as those with severe pressure ulcers, severe depression, incontinence, or swallowing impairments) or who require monitoring of lab values (such as those with anemia or diabetes) may be more likely to go to IRFs than SNFs. Yet at the same time, IRF patients' complexity cannot be so high that they cannot tolerate and be expected to benefit from an intensive therapy program. And, because facilities within a setting vary as much they do across settings, any given SNF or IRF may not have the capabilities to treat a patient's specific care needs.

Even if the capabilities of IRFs and SNFs vary, the services furnished to patients without complex medical and rehabilitation needs do not need to differ. If less-complex patients have comparable outcomes when treated in IRFs and SNFs, the intensive services furnished by an IRF may not be necessary for these patients. Furthermore, the fact that care does not need to differ suggests the need to refine payment policies, such as relaxing the IRF requirements for select conditions and equalizing Medicare's payments between settings.

Possible conditions for site-neutral payments

In examining site-neutral payments, the Commission's overarching principle is that Medicare should not pay substantially different prices for the same service or for treating similar patients. Instead, prices should be based on the lower cost setting when the patients appear to be similar and, where evidence exists, quality and outcomes appear to be similar. Across its work on site-neutral payments, the Commission has used several criteria to select services and conditions (see text box on selecting services and conditions for site-neutral payments, pp. 102–103). To select conditions for site-neutral payments between SNFs and IRFs, we considered IRF volume and spending, whether the conditions are frequently treated in SNFs, literature on the costs and outcomes of patients treated in both settings, the severity of patients treated in each setting, and whether the settings provide comparable units of service. Using these criteria, we selected three conditions for evaluating site-neutral payments between IRFs and SNFs: major joint replacement, stroke, and hip and femur procedures (including hip fracture).

We identified patients based on their MS–DRG from their preceding acute hospital stay. MS–DRGs were not used to establish payments for IRF or SNF stays, but they allowed us to identify patients receiving rehabilitation care for similar conditions in both settings. While the MS–DRG may not capture all of the factors relevant to a patient's rehabilitation and post-acute care needs (such as functional status), we used MS–DRGs to identify groups of patients that we then compared in more detail. Some patients' clinical conditions change between hospital discharge and admission to SNFs or IRFs, but most patients are admitted to each setting within a day of hospital discharge. We show only one MS–DRG per condition as a way to illustrate the issues raised and the possible impacts of a site-neutral payment policy, but note where results for a broader set of eight MS–DRGs covering the three conditions vary from the results we report. By focusing on three conditions, we can evaluate the feasibility of site-neutral payments between IRFs and SNFs, testing the "proof of concept."

Volume and spending in IRFs

Conditions with the highest IRF volume and spending are major joint replacement without MCCs (MS–DRG 470),

**TABLE
6-3**

For the three selected conditions, a large share of stays were treated in SNFs, even in markets with IRFs, 2011

Condition	Percent treated in SNFs	
	All markets	Markets with both IRFs and SNFs
Stroke with CC	47%	33%
Major joint replacement without MCC	79	68
Hip & femur procedures with CC	75	63

Note: SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), CC (complication or comorbidity), MCC (major complication or comorbidity). The illustrative conditions were patients receiving rehabilitation care after stroke with CC (MS-DRG (Medicare severity-diagnosis related group) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). Market is defined as hospital service area. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting.

Source: MedPAC analysis of IRF, SNF, and hospital claims 2011.

stroke with complications or comorbidities (CCs) (MS-DRG 65), and hip and femur procedures with CCs (MS-DRG 481). These three MS-DRGs account for about one-quarter of the more than 370,000 IRF stays and Medicare's spending on IRF care. Broader definitions of these conditions—stroke defined by MS-DRGs 64–66, major joint replacement defined by MS-DRGs 469 and 470, and hip and femur procedures defined by MS-DRGs 480–482—were also studied. These eight MS-DRGs account for about one-third of all IRF volume and spending.

The conditions are frequently treated in SNFs

To ensure that the conditions can be appropriately treated in SNFs, we examined the share of cases treated in SNFs nationwide and in markets (defined as hospital service areas, or HSAs) with both SNFs and IRFs.

Many markets do not have IRFs (only about one-quarter of HSAs have at least one IRF); therefore, SNFs far outnumber IRFs.⁸ Almost all HSAs with IRFs have at least one SNF. Our reasoning for examining markets with both types of facilities was that if a large share of patients elects to go to (or is referred to) SNFs even with an IRF in the market, then the condition can generally be treated in SNFs.

In 2011, across all markets, 47 percent of stroke patients, 79 percent of major joint replacements, and 75 percent of hip and femur procedures were treated in SNFs (Table 6-3). While the share of cases going to SNFs was smaller in markets with both types of facilities, one-third of stroke

patients and approximately two-thirds of the orthopedic cases were treated in SNFs in these markets, indicating that these conditions are frequently treated in SNFs—even in markets where an IRF is available as a potential treatment setting.

Regarding the three conditions captured across the eight MS-DRGs, we found that the shares of patients going to IRFs were higher for the MS-DRGs with CCs and lower for MS-DRGs with MCCs. This finding suggests that the patients with MCCs were less likely to be able to tolerate intensive therapy furnished in IRFs and were discharged elsewhere. Conversely, patients with a lesser CC for MS-DRG classification purposes could still meet the medical necessity requirements for IRF admission, such as a need for the nurse staffing or physician oversight present in IRFs or a need for intensive rehabilitation.

We note that current FFS utilization patterns do not necessarily reflect where patients would best receive their care at the lowest cost to the program for many reasons. Because there are typically no financial incentives for hospitals to refer patients to the most efficient or effective setting, discharge decisions are made using many criteria. Usually, the attending physician specifies the PAC setting most suitable to a patient's care needs, and the discharge planner identifies a list of providers for the patient and family to consider. Placement decisions reflect the availability of PAC settings in a local market (whether there is an IRF or a SNF with an intensive rehabilitation program in the market) and the availability of beds. In addition, the hospital's and family's proximity

Selecting services and conditions for site-neutral payments

The Commission has examined site-neutral payment policies in inpatient and outpatient settings (Medicare Payment Advisory Commission 2014, Medicare Payment Advisory Commission 2012). Hospital outpatient departments are often paid more for furnishing ambulatory services than physician's offices furnishing the same services, long-term care hospitals (LTCHs) are paid more than acute care hospitals for treating patients who are not chronically critically ill, and inpatient rehabilitation facilities (IRFs) are often paid more than skilled nursing facilities (SNFs) for treating similar patients.

To select services or conditions for site-neutral payments, the Commission has used several criteria (Table 6-4). Of these, three criteria applied across all sectors: patients are frequently treated in the lower cost setting, indicating that setting is safe; patients have similar severity in the two settings; and the unit of service is comparable. The application of the other criteria varied slightly, in part because not all are relevant to all settings.

The criteria reviewed by the Commission are described more completely here:

- **Service is frequently furnished in the lower cost setting.** The Commission has used volume in the lower cost setting to indicate that the setting is safe for treating patients and that payments in the lower cost setting are adequate to ensure access to care. In considering whether patients can be safely treated in physicians' offices instead of hospital outpatient departments, the Commission examined ambulatory services that were furnished in physicians' offices over 50 percent of the time. In markets without IRFs and LTCHs, beneficiaries were treated in the lower cost settings—SNFs and acute care hospitals, respectively. In comparing IRFs and SNFs, we also evaluated the overall capacity of the SNF industry to treat patients with site-neutral conditions, in the event that the IRF industry elected to not admit these patients.

**TABLE
6-4**

Criteria used to select services or conditions for site-neutral payments

Criterion	Physician's office-hospital outpatient	LTCH-acute care hospitals	SNF-IRF
Patients frequently treated in lower cost setting	X	X	X
Patients have similar severity levels	X	X	X
Comparable unit of service	X	X	X
Literature on quality and outcomes	None identified	X	X
High volume/high Medicare spending in low-cost setting			X*
Service associated with emergency care	X	N/A	N/A
Low frequency of global surgical codes	X	N/A	N/A

Note: LTCH (long-term care hospital), SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), N/A (not applicable).

*We used high volume/high Medicare spending to identify services to test the concept of site-neutral payments. If site-neutral policies were adopted, this criterion would not necessarily be required to identify services for broader implementation.

(continued next page)

to PAC providers, patient and family preferences, and the organizational relationships between providers play a role in patient placement (Buntin et al. 2005, Gage et al. 2008).

Medicare rules (conditions of participation and payment and coverage rules) provide some guidance regarding placement, but providers have considerable latitude in

terms of which patients they admit among the patients referred to them by hospitals. Medicare requires IRFs to have 60 percent of their cases represent 13 specific conditions that typically require intensive rehabilitation, and patients must require an intensive rehabilitation therapy program, which may be demonstrated by

Selecting services and conditions for site-neutral payments (cont.)

- **Patient severity.** In the analyses of ambulatory and IRF–SNF services, we compared the risk scores (based on the hierarchical condition categories) of beneficiaries treated in different settings to confirm that the patients’ health status was of similar severity (Medicare Payment Advisory Commission 2013). For example, a service was not selected if the average risk score for patients in hospital outpatient departments was higher than the average score for patients in physicians’ offices. In the LTCH work, we identified chronically critically ill conditions and excluded them from site-neutral payment policies.
- **Comparable service unit.** *Comparable units* refers to whether payment for the service in each setting covers the same services or includes a broader or narrower set of services compared with payment for other settings. Medicare’s payments to LTCHs, acute care hospitals, SNFs, and IRFs cover all services furnished to the beneficiary and therefore are considered to have comparable units of service.⁹ For ambulatory services, the Commission pursued two strategies because the level of “packaging” (grouping ancillary items and services with the primary service) differs by setting. In cases where the unit of payment in the hospital outpatient department includes more services than in the physician office, the Commission recommended narrowing, but not eliminating, the payment differences to account for these packaging differences.
- **Literature on quality and outcomes.** Literature comparing outcomes and quality factored into our consideration of site-neutral payments. It also helped identify conditions or characteristics suitable for a site-neutral policy, in terms of patients to include or exclude from the policy. No literature could be identified comparing the outcomes or quality of the ambulatory services studied by setting. As for services in LTCHs, numerous studies have been conducted and do not find a clear advantage for LTCH users, but are consistent in describing chronically critically ill patients—those most appropriate for LTCH care—as having high use of intensive care unit services. SNF–IRF literature is discussed on pp. 103–104.
- **High volume/high spending.** Conditions frequently treated in IRFs and with relatively high IRF spending were selected to test the concept of site-neutral payments to IRFs. Given the substantial CMS resources needed for policy implementation, we wanted to select conditions that constitute a sizable share of Medicare payments to this sector. If a site-neutral policy were adopted, conditions would not necessarily have to be high volume or account for substantial Medicare spending to be subject to a site-neutral payment policy.
- **Ambulatory service associated with emergency care.** Outpatient department services that are frequently performed on the same day as a visit to an emergency department may incur some of the costs associated with providing emergency care. Because physicians’ offices do not provide emergency care, we excluded these services from our site-neutral payment policy. This criterion was typically not relevant to the other sectors.
- **Low frequency of global surgical codes.** For ambulatory services, the costs of surgical services with 90-day global codes are generally assumed to be higher in hospitals compared with physicians’ offices. Therefore, services with 90-day global codes were considered not appropriate for site-neutral payments. This criterion was not relevant to the other settings. ■

furnishing three hours of therapy a day (often loosely referred to as the “three-hour” rule). Beneficiaries using SNFs must require skilled services (services furnished by skilled personnel such as registered nurses and physical therapists), but the amounts of service furnished vary considerably across patients.

Studies comparing IRFs and SNFs in terms of quality and outcomes

A final consideration in selecting conditions was the literature comparing costs and outcomes of patients treated in SNFs and IRFs. Studies have largely focused on patients recovering from strokes, joint replacement, and hip

fracture (Buntin et al. 2010, DeJong et al. 2009a, DeJong et al. 2009b, Deutsch et al. 2006, Deutsch et al. 2005, Herbold et al. 2011, Kane et al. 2000, Kane et al. 1998, Kramer et al. 1997, Mallinson et al. 2014, Mallinson et al. 2011, Munin et al. 2005, Walsh and Herbold 2006). The time periods covered by many of the studies predate the beginning of the IRF prospective payment system (PPS) and the enforcement of the 60 percent rule, which shifted the mix of patients treated in IRFs. A CMS-funded project concluded that many of the studies were of limited use because they did not adequately control for selection bias (Gage et al. 2009). Although statistical methods exist to control for unmeasured factors influencing site selection, they have not been widely used in studies of differences in outcomes between SNFs and IRFs. Studies are also limited in their consideration of potential differences in patient motivation and long-run recovery potential that can dramatically affect patient outcomes. More recent studies have included at least some controls for differences across patients, though it is hard to draw conclusions from them. Studies of other conditions typically do not compare outcomes across PAC sites, and when they do, they do not adequately control for the different mix of patients to draw conclusions about outcome differences (Gage et al. 2009).

In general, studies of stroke patients found that patients in IRFs had better outcomes than those in SNFs, though selection bias could have contributed to these findings (Buntin et al. 2010, Deutsch et al. 2006, Kane et al. 2000, Kane et al. 1998, Kramer et al. 1997). Studies of patients after joint replacement and hip fracture do not have consistent conclusions (Buntin et al. 2010, DeJong et al. 2009a, DeJong et al. 2009b, Deutsch et al. 2006, Deutsch et al. 2005, Herbold et al. 2011, Kane et al. 2000, Kane et al. 1998, Kramer et al. 1997, Mallinson et al. 2014, Mallinson et al. 2011, Munin et al. 2005, Walsh and Herbold 2006). In addition to selection bias, the ambiguous results suggest that reasonable treatment approaches may differ across beneficiaries. Some patients may be more appropriate for longer stays in less-intensive settings while others benefit from shorter, more-intensive therapy (Stineman and Chan 2009).

The CMS Post-Acute Care Payment Reform Demonstration (PAC–PRD) compared resource use and outcomes across the study’s patients and conducted separate analyses of patients with musculoskeletal (including hip and knee replacement and hip fracture) and nervous system conditions (predominantly stroke cases) (Gage et al. 2011). In the demonstration, CMS successfully developed, validated, and tested a uniform

patient assessment tool (the Continuity Assessment Record and Evaluation, or CARE). This tool was used to gather consistently defined information about patients’ functional status and about clinical and stay characteristics. The demonstration also collected data on patients’ use of routine care (predominantly nursing) and rehabilitation therapy. With the data collected, the study could compare risk-adjusted patient outcomes and direct patient care costs, after controlling for many patient characteristics.

Similarity of patients treated in IRFs and SNFs

Establishing site-neutral payments between SNFs and IRFs would require that the patients treated in each setting be similar. Because IRF patients are expected to tolerate and benefit from an intensive therapy program, some medically complex patients are not admitted to this setting. Nevertheless, because IRFs are licensed as hospitals and must meet Medicare’s conditions of participation, which include more physician and nursing presence, IRFs can manage patients who require the medical oversight not available in many SNFs (such as the administration of IV medications).

In our analyses, we identified cases that were discharged from acute care hospitals with the select MS–DRGs and that went to SNFs or IRFs within 30 days (though the vast majority of beneficiaries were admitted to the SNF or IRF within one or two days). Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF that subsequently went to a SNF would be considered an IRF stay. We excluded from most analyses SNF and IRF stays involving beneficiaries who were enrolled in MA plans, who died during the IRF or SNF stay or within 30 days of discharge from either setting, or who stayed three or fewer days in the first PAC setting. This last qualification helped ensure that cases that would qualify for IRF short-stay payments and their SNF equivalents were excluded. The analysis of mortality rates includes beneficiaries who died and excludes beneficiaries enrolled in MA. We did not narrow our examination to beneficiaries discharged to SNFs and assigned to the ultra-high rehabilitation case-mix groups because 40 percent of days for the three conditions were assigned to other rehabilitation case-mix groups. Had we limited the comparison to the days assigned to ultra-high case mix groups, we would have excluded this sizable share of stays from our comparisons of SNF and IRF patients.

**TABLE
6-5****Characteristics of Medicare beneficiaries treated in IRFs and SNFs for three selected conditions were similar, 2011**

Condition	Setting	Risk score	Age	Percent				
				Under 65 years old	85+ years old	Dual eligible	Minority	Female
Stroke with CC	SNF	1.8	81	5%	42%	28%	21%	65%
	IRF	1.5	76	11	24	22	22	55
Major joint replacement without MCC	SNF	1.3	76	7	18	15	11	74
	IRF	1.4	77	9	22	15	11	72
Hip & femur procedures with CC	SNF	1.7	83	4	50	21	8	79
	IRF	1.7	80	6	38	17	8	74

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), CC (complication or comorbidity), MCC (major complication or comorbidity). The illustrative conditions were patients receiving rehabilitation care after stroke with CC (MS-DRG (Medicare severity-diagnosis related group) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). Risk score was measured by the beneficiary hierarchical condition category. Data shown are for SNFs and IRFs located in markets with both types of facilities. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting. Dual eligibles are beneficiaries who qualify for Medicare and Medicaid.

Source: Analysis conducted by the Urban Institute of the 2011 denominator files, the 2011 hierarchical condition category risk scores, and 2011 Medicare Provider Analysis and Review data.

We compared patients admitted to IRFs and SNFs located in markets with both types of facilities, reasoning that such markets allow beneficiaries and clinicians to choose between PAC settings. With both options available, these markets allow us to better observe distinctions in the types of patients admitted to each setting. We note where findings for the markets with both types of facilities differ from findings for all markets. Our analyses were limited to administrative data routinely collected by CMS and to the data and findings of CMS's PAC-PRD. These sources do not include some important determinants of outcomes, such as patient motivation or potential for long-term recovery.

We found considerable overlap in the patients receiving rehabilitation care after the orthopedic conditions treated in IRFs and SNFs and more variation in the stroke patients. Patients requiring rehabilitation after hip or knee replacements, which are generally elective procedures, were similar and indicate that a site-neutral policy could be implemented for these conditions. Given the greater heterogeneity of the stroke population, and considering that IRFs are the dominant treatment setting where both settings are available, more work needs to be done to delineate the types of stroke cases that would (and would not) be suitable for a site-neutral policy. Patients receiving rehabilitation therapy services after certain types of strokes or with particular comorbidities or functional impairments

may require 24-hour nursing, frequent physician oversight, or the intensive rehabilitation available in IRFs and would therefore likely be excluded from a site-neutral policy. Other stroke cases (such as those with a fairly predictable course of symptoms and treated according to generally accepted protocols) may be candidates for a site-neutral policy.

Risk scores and patient demographics

In markets with both types of facilities, we found considerable overlap in the demographic characteristics of patients treated for the three conditions (Table 6-5). The average beneficiary risk scores (as measured by the HCC model) across the three MS-DRGs were comparable between IRF and SNF patients. By condition, there were small differences in the risk scores, with SNFs' stroke patients having higher risk scores and their orthopedic patients having lower scores. The distribution of the risk scores for IRF patients overlapped considerably with the distribution of scores for SNF patients. Across the three conditions, 77 percent of IRF patients had a risk score between the 10th and 90th percentiles of the distribution of risk scores for SNF patients.¹⁰ The overlap was smaller, though still considerable, for stroke patients (72 percent) than for the joint replacement and hip and femur procedures (82 percent and 74 percent, respectively).

**TABLE
6-6**

For the three selected conditions, patients treated in IRFs and SNFs had similar comorbidities, especially for the two orthopedic conditions, 2011

Comorbidity (HCC)	Stroke with CC		Major joint replacement without MCC		Hip and femur procedures with CC	
	SNF	IRF	SNF	IRF	SNF	IRF
Cardio-respiratory failure and shock	7%	5%	4%	4%	7%	6%
Chronic obstructive pulmonary disease	18	15	13	15	19	19
Congestive heart failure	26	20	13	15	22	20
Diabetes without complication	18	19	16	17	14	16
Heart arrhythmias	29	22	15	17	23	21
Major depressive, bipolar, and paranoid disorders	7	4	6	6	7	5
Polyneuropathy	10	9	8	10	9	10
Renal failure	19	15	11	12	17	15
Rheumatoid arthritis	6	6	9	10	7	8
Stroke (during previous year)	17	13	3	5	7	6
Vascular disease	25	19	16	18	24	20

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), CC (complication or comorbidity), MCC (major complication or comorbidity), HCC (hierarchical condition category). The three selected conditions are stroke with CC (Medicare severity-diagnosis related group (MS-DRG) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). Polyneuropathy is nerve damage to peripheral nerves (beyond the brain and spinal cord) and can result from uncontrolled diabetes. Data shown are for SNFs and IRFs located in markets with both types of facilities. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting.

Source: Analysis conducted by the Urban Institute of the 2011 Medicare risk score file.

There was similar overlap in the average risk scores for patients treated in SNFs and IRFs across all markets.

There were small differences in the demographics of the patients treated in IRFs and SNFs for the three conditions. SNF patients were older than IRF patients for two of the conditions (stroke and hip and femur procedures) and about the same age as IRF patients for major joint replacement. SNFs had a larger share of beneficiaries over 85 years old for two of the conditions (stroke and hip and femur procedures) and, across the three conditions, SNFs had a smaller share of beneficiaries under 65 years old. Nevertheless, there was considerable overlap in the distributions of the ages in the two settings. For these three conditions, 79 percent of IRF patients had ages between the 10th and 90th percentiles of the age distribution of SNF patients in all markets and in markets with both types of facilities. IRFs and SNFs had similar shares of dual-eligible and minority beneficiaries. SNFs had a higher share of female beneficiaries compared with IRFs.

We also compared the average risk scores and demographics of SNF patients in markets that included

both types of facilities with those of SNF patients in markets without an IRF. There were very small or no differences between the two sets of SNF patients.

For the broader set of conditions defined by the eight MS-DRGs, IRFs and SNFs exhibited risk-score patterns similar to those for the select conditions covered by the three MS-DRGs. Differences were larger in the risk scores for stroke patients than in the scores for patients with the orthopedic conditions. The overlaps in the SNF and IRF risk scores for the broader set of conditions were also similar to the scores for the three conditions, with 73 percent to 78 percent of IRF patients having a risk score between the 10th and 90th percentiles of SNF patients (depending on the condition). SNF beneficiaries were older on average, with fewer beneficiaries younger than 65 years old and more beneficiaries who were 85 years or older. There was considerable overlap in the age distributions, with 77 percent to 87 percent of IRF patients having ages between the 10th and 90th percentiles of SNF patients, depending on the condition. With respect to the shares of dual-eligible, minority, and female beneficiaries

**TABLE
6-7****Differences in prior service use and functional impairment for all beneficiaries treated in IRFs and SNFs and assessed in CMS's Post-Acute Payment Reform Demonstration**

Prior service use and patient impairments	Percent of patients admitted to:	
	IRFs	SNFs
Prior service use		
History of falls	46%	52%
Acute hospital claim within past two months	3	9
At least seven days in an intensive care unit in prior hospital stay	1	3
Functional impairment		
Bladder incontinence	41	36
Indwelling catheter	5	3
Swallowing signs and symptoms	11	6
No sitting endurance	41	45
Communication moderately or severely impaired	40	31
Temporal orientation moderately or severely impaired	18	28

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility). Results are for all patients treated in IRFs and SNFs and included in CMS's Post-Acute Care Payment Reform Demonstration. *Temporal impairment* indicates whether patients have difficulty knowing the month or year, and if so, whether they can correctly identify the season, staff members' faces or names, or where they are located (e.g., in a nursing home).

Source: Gage et al. 2011.

for the broader set of conditions, IRFs and SNFs exhibited similar patterns to those for the three select conditions.

Comorbidities and other patient characteristics

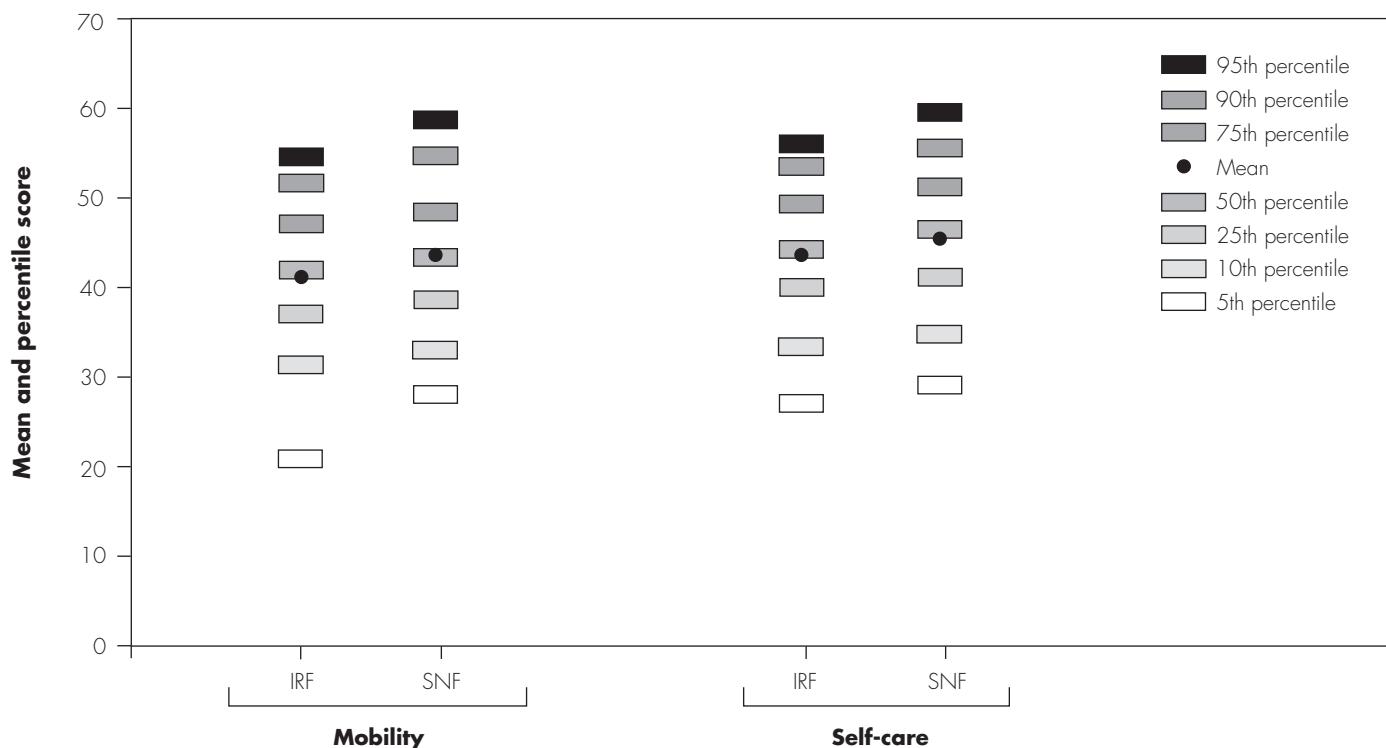
We examined comorbidities and other patient characteristics as another point of comparison between IRF and SNF patients. For the three conditions selected, we compared comorbidities using HCCs, which are based on the patients' claims history from the prior year and thus capture acute and chronic conditions during that year. For the orthopedic conditions, the prevalence of the HCCs was very similar, with patients treated in IRFs and SNFs differing by one or two percentage points (Table 6-6). There were larger differences in the prevalence of the comorbidities between patients treated in IRFs and SNFs with stroke conditions. The higher prevalence of comorbidities of SNF patients may reflect that the patients could not tolerate the intensive therapy required for IRF admission. The results were consistent across markets with both types of facilities, all markets, and markets without IRFs. Across the broader set of conditions, the comorbidities of patients treated in IRFs and SNFs were similar, especially for the orthopedic conditions.

We also examined differences in patients' prior use of services and functional impairment from data gathered in CMS's PAC demonstration because these characteristics either are not recorded in the SNF and IRF patient assessments or are not consistently defined. The demonstration collected patient information over three years, from March 2008 through 2010, for 6,054 admissions to SNFs and 7,380 admissions to IRFs (Gage et al. 2011). Much of the data predate the regulations CMS implemented in 2010 that clarified medical necessity requirements for IRF admissions. Although these requirements could have changed the mix of patients admitted to IRFs, our analysis of IRF admissions over time suggests the policies did not produce lasting changes in the IRF patient population. In fact, growth in case-mix complexity slowed slightly after 2010, increasing an average 0.7 percent each year from 2010 through 2012, compared with 1.1 percent each year from 2008 through 2010.

These data show some differences between IRF and SNF patients in their prior service use and impairments (Table 6-7). Across all patients evaluated (not just patients with the three selected conditions), patients in IRFs were more likely to have bladder incontinence, signs and symptoms

**FIGURE
6-1**

At facilities participating in CMS's Post-Acute Care Payment Reform Demonstration, mobility and self-care function of patients at admission to IRFs and SNFs were similar



Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility). Data for the Post-Acute Care Payment Reform Demonstration include 6,054 admissions to SNFs and 7,380 admissions to IRFs between March 2008 and December 2010.

Source: Gage et al. 2011.

related to swallowing, and moderate or severe impairment in communicating. Conversely, patients admitted to SNFs were more likely than patients admitted to IRFs to have had a history of falls, an acute hospitalization within the previous two months, no sitting endurance, and moderately or severely impaired temporal orientation. Some conditions, such as dementia, could impair a beneficiary's ability to tolerate or follow instructions of an intensive therapy regime, so these patients may be more appropriate for SNF care. Characteristics that shape a patient's care needs could be used to delineate (or exclude) conditions for site-neutral payment.

Functional status at admission

CMS's PAC demonstration also allows for the comparison of functional status at admission to SNFs and IRFs because a common patient assessment instrument was used in both settings. Across all patients admitted to

participating facilities (not only for the select conditions), the functional status (as measured by mobility and self-care) of all patients at admission shows considerable overlap (Figure 6-1).¹¹ The mean scores for mobility and self-care are within one point, although patients admitted to IRFs have slightly lower scores at each percentile shown. These results suggest that the functional status of IRF and SNF patients are similar overall.

Predicted nontherapy ancillary and therapy costs

In our work to redesign the SNF PPS to establish payments based on patient characteristics, we developed models to predict patients' nontherapy ancillary (NTA) (such as drugs) and therapy costs. Because these predicted costs reflect differences across patients' ages, comorbidities, and functional status at admission, we used them as predictors of patients' care needs. We found

SNF patients had lower relative predicted costs for NTA and therapy services compared with patients treated in IRFs. However, there was substantial overlap in the SNF and IRF distributions for predicted NTA costs, with 78 percent of IRF patients falling between the 10th and 90th percentiles of the SNF distribution of predicted NTA costs. One might expect less overlap in the distributions of predicted therapy costs because IRFs have intensive therapy requirements while SNFs face payment ceilings at 720 minutes of therapy per week. In fact, there was less (though still considerable) overlap in the two distributions for predicted therapy costs (on average, 73 percent of the IRF patients' predicted costs were between the 10th and 90th percentiles of the SNF distribution). These findings held across patients treated in IRFs and SNFs in all markets.

For the broader set of conditions, IRFs and SNFs exhibited similar cost patterns to those for the three select conditions. IRFs had higher average predicted therapy and NTA costs compared with SNF patients. There was considerable overlap in the predicted NTA cost distributions and less overlap in the predicted therapy costs, particularly for the hip and femur procedures.

Predicted probability of patients going to IRFs or SNFs based on their characteristics

Another way to assess the similarity of the patients who go to SNFs and IRFs is to see how well the setting that a patient went to can be predicted based on a patient's clinical conditions and demographics. If we cannot reasonably predict whether acute patients discharged from acute hospitals will be admitted to an IRF or a SNF, then the low predictability is an indication that the patients are similar. However, if such a prediction can be made accurately, then the level of predictability indicates that the two settings differ in their patients' clinical conditions and demographics. Patients with comorbidities associated with a much lower probability of admission to a SNF might be considered inappropriate for site-neutral payments.

We estimated the probability of a patient going to a SNF in markets with both SNFs and IRFs, using a patient's comorbidities measured before the stay (their HCCs and a subset of hospital diagnoses) and age. Generally, about two-thirds of orthopedic patients are admitted to SNFs and one-third are admitted to IRFs. For patients with the orthopedic conditions, the regression models had little ability to predict whether a patient would go to a SNF, indicating relatively few differences across settings in

the patients admitted to each setting.¹² Reflecting the overlap in patients going to both settings, IRF and SNF patients had similar probabilities of going to a SNF. Major joint replacement patients who went to IRFs had an average predicted probability of 67 percent of going to SNFs compared with a 69 percent probability for patients who went to SNFs. Hip and femur procedure patients who went to IRFs had a 60 percent probability of going to a SNF compared with a 64 percent chance for SNF patients. In addition to similar average probabilities, the distributions of the probabilities were also similar between patients who went to an IRF or a SNF.

There appear to be more distinctions between the two settings for stroke patients compared with the orthopedic conditions. Overall, one-third of stroke patients go to SNFs; two-thirds go to IRFs. The model was slightly better able to predict patients going to a SNF.¹³ Stroke patients who went to IRFs had a predicted probability of 30 percent of going to a SNF, compared with a predicted probability of 38 percent for patients who went to SNFs. Because systematic differences in stroke patients across settings could reflect that patients with certain comorbidities are more likely to use SNFs (conditions that may prevent their ability to tolerate IRFs' intensive therapy requirements), we also examined a model that excluded characteristics associated with higher SNF use. This second model included only patient characteristics associated with a higher likelihood of treatment in IRFs (i.e., the characteristics that could potentially flag cases where IRF care is most appropriate). This model had little ability to predict use of SNF versus IRF, suggesting that patients in the two settings are similar with respect to the conditions that are likely to raise the probability of using an IRF.¹⁴

We also considered the probabilities of discharged hospital patients going to a SNF or an IRF, using diagnoses measured at admission to these post-acute facilities. We found larger differences between SNF and IRF patients, but were unable to distinguish whether the patients differed or whether facilities differed in their coding practices. The two PPSs differ considerably in how extensively they use clinical conditions to establish payments. While IRF payments increase with the presence of one or more of over 900 comorbidities for almost any patient, only a handful of conditions are used in the SNF PPS, and none are used to adjust payments for the almost 90 percent of days assigned to rehabilitation-only case-mix groups.

**TABLE
6-8****SNFs had higher unadjusted readmission rates compared with IRFs for the three selected conditions, 2011**

Condition	IRFs in markets with IRFs and SNFs	All SNFs	SNFs in markets with IRFs and SNFs	SNFs in markets without IRFs
Stroke with CC	11.1%	15.3%	15.6%	15.0%
Major joint replacement without MCC	6.1	6.6	6.4	6.8
Hip & femur procedures with CC	8.4	11.3	11.4	11.1

Note: SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), CC (complication or comorbidity), MCC (major complication or comorbidity). The illustrative conditions were patients receiving rehabilitation care after stroke with CC (MS-DRG (Medicare severity-diagnosis related group) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). All readmissions were defined using CMS's definition of hospital-wide unplanned readmission measure and excluded planned readmissions. Readmissions were counted if they occurred during the stay or within 30 days of discharge from the IRF or SNF. Market is defined as the hospital service area. Readmission rates for IRFs in all markets were the same as those for markets with both IRFs and SNFs because there are only four IRFs in markets without a SNF. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting.

Source: MedPAC analysis of IRF, SNF, and hospital claims 2011.

Outcomes for patients with one of the three conditions are mixed, with risk-adjusted measures indicating small or no differences between IRFs and SNFs

For patients with one of the select conditions, we compared four outcomes for SNFs and IRFs: hospital readmission rates, changes in functional status, mortality rates, and total Medicare spending during the 30 days after discharge from the qualifying stay. The comparisons yielded mixed results. Differences in unadjusted readmission rates for patients treated in IRFs and SNFs were effectively eliminated with risk adjustment. Risk-adjusted differences in improvement in self-care were larger for patients treated in IRFs compared with patients treated in SNFs, but there were not statistically significant differences between the two settings for changes in mobility. Observed mortality rates were higher for patients treated in SNFs compared with patients treated in IRFs. Finally, Medicare spending during the 30 days after discharge from IRFs was higher compared with discharge from SNFs.

Readmission rates

For the three selected conditions, we compared observed hospital readmissions rates (excluding planned readmissions) for stays in IRFs and SNFs, and for the 30 days after discharge from either setting. We did not risk adjust the rates (although the rates were tallied

by condition, not across conditions) because uniform patient assessment information was not available. SNFs had higher observed readmission rates compared with IRFs, especially for two conditions (Table 6-8). The differences in observed rates were similar for the broader definitions of the conditions. Within the joint replacement group, IRFs and SNFs had similar readmission rates for patients after total hip and knee replacements (with IRFs having slightly higher rates), but SNFs had considerably higher readmission rates for patients after partial hip replacements compared with IRFs. Readmission rates for SNFs in all markets, in markets with IRFs and SNFs, and in markets without IRFs were similar.¹⁵

The PAC-PRD compared risk-adjusted readmission rates using the common assessment data collected with the CARE tool. The rates were adjusted for differences in patient age, diagnoses and comorbidities, major treatments received (such as total parenteral nutrition or ventilator), cognitive status, presence of wounds, and functional status (Gage et al. 2011). Across all conditions, including the three in our analyses, the risk-adjusted rates of rehospitalization did not differ significantly between the two settings. The study also conducted separate analyses of patients hospitalized for musculoskeletal conditions (including major joint replacement and hip and femur procedures) and nervous system conditions (including stroke).¹⁶ It did not find statistically significant differences in risk-adjusted readmission rates between the two settings for either group.

**TABLE
6-9**

For the three selected conditions, SNF and IRF observed mortality rates were comparable during stays, but higher in SNFs in the 30 days after discharge, 2011

Condition	Setting	Mortality rate	
		During stay	30 days after discharge
Stroke with CC	IRFs in markets with IRFs and SNFs	0.0%	4.4%
	SNFs in markets with IRFs and SNFs	0.1	17.0
	All SNFs	0.1	17.0
Major joint replacement without MCC	IRFs in markets with IRFs and SNFs	0.0	0.9
	SNFs in markets with IRFs and SNFs	0.3	2.1
	All SNFs	0.3	2.2
Hip & femur procedures with CC	IRFs in markets with IRFs and SNFs	0.0	2.6
	SNFs in markets with IRFs and SNFs	0.1	9.3
	All SNFs	0.1	9.2

Note: SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), CC (complication or comorbidity), MCC (major complication or comorbidity). The illustrative conditions were patients receiving rehabilitation care after stroke with CC (MS-DRG (Medicare severity-diagnosis related group) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). Mortality rates are not risk adjusted and may not reflect differences in patient risk profiles. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. SNF and IRF stays for beneficiaries enrolled in Medicare Advantage plans were excluded.

Source: MedPAC analysis of 2011 Medicare Provider Analysis and Review and denominator files.

Changes in function

The PAC–PRD study also reported changes in self-care and mobility during the patients' PAC stay across all conditions (not just the select three in this chapter), controlling for selection bias using the demographic and clinical covariates (Gage et al. 2011). The risk-adjusted rate of improvement in mobility function (for example, walking or transferring between bed and chair) did not vary significantly between the two sites. For self-care function (e.g., eating, hygiene, and dressing), patients in IRFs had higher risk-adjusted rates of improvement that were statistically significant than patients in SNFs, but the thresholds for defining differences that were clinically meaningful were not determined. The authors cautioned that there may be unmeasured differences in patient severity and rehabilitation potential. In addition, the risk adjustment model did not consider differences across patients in their motivation and engagement and in treatment objectives.

The PAC–PRD study conducted separate analyses of patients who were hospitalized for musculoskeletal conditions (including elective hip and knee replacement and hip fracture) and nervous system conditions.¹⁷ In the musculoskeletal group, it did not find statistically

meaningful differences in risk-adjusted changes in mobility or self-care. In the nervous system group, the study did not find statistically significant differences in the risk-adjusted changes in mobility, but found that patients treated in IRFs had larger gains in self-care. The study did not establish thresholds for defining clinically meaningful differences in changes in function for the nervous system group.

Mortality rates

In markets with IRFs and SNFs, the unadjusted mortality rates were similar during the IRF and SNF stays but considerably higher for SNFs in the 30-day period after discharge (Table 6-9). Deaths that occurred during any readmission to an acute care hospital were included in the 30-day measure. The differences in mortality rates for stroke patients may partly reflect differences in risk scores, age, and comorbidities of patients treated in SNFs and IRFs. Given the higher risk scores for stroke patients treated in SNFs, risk-adjusted mortality rates of stroke patients treated in IRFs and SNFs are likely to be more similar, though differences in rates would likely remain. The rates for SNFs in all markets were almost identical to the rates for SNFs in markets with both IRFs and SNFs. A separate industry-sponsored study reported differences in IRF and SNF mortality rates during the two years after

**TABLE
6-10**

Medicare spending in 30 days after discharge from IRFs was higher than spending after SNF stays for the three selected conditions, 2011

Condition	Discharged from	30-day after discharge spending			Initial IRF or SNF stay plus 30-day spending	
		Total	Additional PAC	Readmission		
Stroke with CC	IRF	\$13,931	\$10,456	\$2,212	\$1,262	\$35,146
	SNF	12,318	7,305	3,582	1,431	28,476
Major joint replacement without MCC	IRF	6,775	4,709	1,205	861	21,022
	SNF	5,339	3,234	1,280	825	15,104
Hip & femur procedures with CC	IRF	12,459	9,549	1,861	1,049	30,576
	SNF	10,298	6,387	2,731	1,180	28,194

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), PAC (post-acute care), CC (complication or comorbidity), MCC (major complication or comorbidity). The illustrative conditions were patients receiving rehabilitation care after stroke with CC (MS-DRG (Medicare severity-diagnosis related group) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). Additional PAC use can include home health care or additional IRF or SNF care, including care after a hospital readmission. Readmissions include readmissions to an acute care hospital for any reason. Physician and other services include outpatient therapy, physician, hospice, and other Part B services (such as lab services). Program payments to IRFs include payments for having a teaching program, treating low-income patients, or having high-cost outliers. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting. Data are for IRFs and SNFs located in markets with both types of facilities.

Source: MedPAC analysis of 2011 Medicare Provider Analysis and Review data.

discharge (DaVanzo et al. 2014). For similar patients, it found SNFs had higher mortality rates compared with IRFs, although completely adjusting for differences in patients is difficult.

Spending during the 30 days after discharge from an IRF or SNF

We examined total Medicare spending during the 30 days after discharge from the IRF and SNF stays and found that patients treated in IRFs had higher spending in the 30 days after discharge from the IRF compared with patients treated in SNFs. The spending in the 30-day period included total program payments for hospital readmissions, additional PAC (such as home health care or IRF or SNF care after a hospital readmission), physician services, outpatient therapy, hospice, and other Part B services (such as lab tests). Across markets with both types of facilities, spending for the three conditions during the 30-day period for IRFs ranged from 13 percent to 27 percent higher than spending for SNFs (Table 6-10). The spending associated with the use of a second (or more) PAC service averaged 46 percent higher for IRFs compared with SNF patients, perhaps due to beneficiaries' shorter stays but continued need for rehabilitation. Across

IRF stays, subsequent SNF use made up almost two-thirds of the PAC spending in the 30 days after discharge from the IRF for stroke and joint replacement patients. Across SNF stays, second SNF use made up 60 percent of subsequent PAC use for stroke and hip and femur procedure patients. Home health agency spending made up most of the remaining PAC spending.

IRF spending on readmissions was considerably lower compared with SNFs for two of the conditions (stroke and hip and femur procedures), reflecting the lower readmission rates for IRF patients. Spending for physician and other Part B services (such as outpatient therapy) made up between 12 percent and 15 percent of the 30-day spending in both settings and was consistently higher in SNFs. When the 30-day spending was combined with the spending on the initial IRF stay, total program spending for IRF patients ranged from 8 percent to 39 percent higher compared with SNF patients, depending on the condition.

Across all markets, the 30-day spending patterns were almost identical to those in markets with both types of facilities. Spending during the 30 days after discharge ranged from 17 percent to 26 percent higher for IRF stays compared with SNF stays. Differences in PAC spending

were slightly larger (49 percent higher in IRFs), while spending on readmissions was the same. Combining the spending on the initial PAC stay with the 30-day spending, IRF stays ranged from 9 percent higher (for hip and femur procedures) to 38 percent higher (for major joint replacement). For SNFs in markets without IRFs, spending—for the initial SNF stay and the 30 days after discharge from the SNF—was very similar to spending for SNF stays in markets with IRFs.

For the broader definitions of the conditions, IRFs and SNFs had similar spending patterns. During the 30 days after discharge, IRFs had higher PAC spending and lower spending on readmissions. Together with the initial IRF stay, patients who used IRFs had higher combined spending (the initial PAC stay plus the 30 days).

Impact of SNF payments on IRFs

To assess the impact of paying IRFs the same rates that SNFs would be paid for the select conditions, we calculated the average differences in payment for each condition and estimated their impacts at the facility level. We compared payments to IRFs under current (2014) IRF policy with two SNF scenarios: payments using the current (2014) SNF PPS and payments under the alternative SNF PPS design recommended by the Commission (Medicare Payment Advisory Commission 2008). Each patient's comorbidities, impairments, and functional status were used to adjust payments according to the current SNF PPS policies and the alternative PPS design. We estimated payments to IRFs if the alternative PPS design for SNFs were adopted because the Commission has long criticized the SNF PPS for encouraging the provision of rehabilitation therapy and poorly targeting payments for NTA services such as drugs (Medicare Payment Advisory Commission 2014, Medicare Payment Advisory Commission 2008). Under the Commission's alternative design, payments to SNFs for rehabilitation therapy services would be based on patient and stay characteristics, not the amount of therapy furnished to beneficiaries (Carter et al. 2012, Garrett and Wissoker 2008). Payments would be higher for patients who, due to their clinical conditions and impairments, require more therapy services, and payments would be better targeted to patients with high NTA care needs.

For the conditions we examined, both SNF payment scenarios would result in a substantial decrease in IRF payment per discharge for stroke and hip and knee

replacement and an increase in payment for hip and femur procedures. However, these case-level changes result in relatively modest decreases in payment at the facility level (about a 4 percent decrease in payment for the three conditions), largely because the cases represent a minority of the total number of IRF cases. We assumed that site-neutral payments would not change the add-on payments many IRFs receive for having a teaching program, treating low-income patients, and having high-cost outlier cases, which, in our analysis, also mitigated total payment impacts at the facility level (see text box, p. 115, on estimating the impact of SNF payments on payments to IRFs).

Impact of SNF payments for the three conditions

For the conditions we examined, both SNF payment scenarios would result in a substantial decrease in payment for stroke and hip and knee replacement and an increase in payment for hip and femur procedures (Table 6-11, p. 114). Under current SNF payment policy for 2014, payment for IRF discharges would decrease by about 22 percent for stroke (MS-DRG 65) and 23 percent for major joint replacement without MCC (MS-DRG 470), while payments would increase by about 5 percent for hip and femur procedures (MS-DRG 481). The impacts under the MedPAC-recommended SNF alternative design were similar to those for current SNF policy (see text box, pp. 116–117, on estimating SNF payments under an alternative PPS design).

Impacts on IRF payment rates were fairly consistent across the broader definitions of the conditions. For example, payments for major joint replacement without MCC (MS-DRG 470) decreased under current SNF policy by 23 percent and by 19 percent for major joint replacement with MCC (MS-DRG 469).

Impact of site-neutral payments on total IRF payments

We estimated the total financial impact on IRFs of site-neutral payments for our select conditions, using the per discharge payment differences. Because the site-neutral policy affects only base payments, the estimates assume IRFs would continue to receive add-on payments at the same levels for the cases paid under a site-neutral policy. We also did not factor in any changes to IRFs' patient admission practices in response to the policy or changes in the 30-day spending in the 30 days after discharge from the IRF.

We estimated the financial impact on IRFs of site-neutral payments for the three conditions—stroke with

**TABLE
6-11****Estimated impact of paying 2014 discharge-adjusted SNF payment rates to IRFs for the three selected conditions examined**

Condition	Payment rate per IRF discharge			Impact on per discharge payment	
	IRF payment rate	SNF current policy	SNF alternative design	SNF current policy	SNF alternative design
Stroke with CC	\$22,391	\$17,440	\$17,321	-22%	-23%
Major joint replacement without MCC	14,648	11,218	12,206	-23	-17
Hip & femur procedures with CC	18,774	19,788	20,298	5	8

Note: SNF (skilled nursing facility), IRF (inpatient rehabilitation facility), CC (complication or comorbidity), MCC (major complication or comorbidity). The illustrative conditions were patients receiving rehabilitation care after stroke with CC (MS-DRG (Medicare severity-diagnosis related group) 65), major joint replacement without MCC (MS-DRG 470), and hip and femur procedures with CC (MS-DRG 481). The average SNF length of stay by condition was used to convert the day-based payments to discharge-based payments. IRF payments do not include additional payments for having a teaching program, treating low-income patients, or having high-cost outlier stays. Stays were assigned to SNFs or IRFs based on the first setting used, so a stay beginning in an IRF and subsequently going to a SNF would be considered an IRF stay. We excluded from our analysis SNF and IRF stays for beneficiaries who were enrolled in Medicare Advantage plans, who died during the IRF or SNF stay or within 30 days after discharge from either setting, or who stayed three or fewer days in the first post-acute care setting.

Source: Analysis conducted by the Urban Institute for MedPAC.

CC, major joint replacement without MCC, and hip and femur procedures with CC (MS-DRGs 65, 470, and 481, respectively). Paying SNF rates under current SNF PPS policy (2014 base rates and 2014 relative weights) for these three conditions would decrease Medicare payments to IRFs by roughly \$300 million, or 4 percent lower total IRF payments. This net impact is the result of decreasing payments for stroke by \$140 million, decreasing payments for major joint replacement by \$180 million, and increasing payments for hip and femur procedures by \$20 million. The IRF payment reductions associated with stroke would be lower if only a subset of stroke cases were eligible for site-neutral payments. Total payment reductions under the MedPAC-recommended SNF alternative model are lower, at about \$240 million.

The second estimate considers a broader definition of these conditions—cases identified with the eight MS-DRGs (64, 65, 66, 480, 481, 482, 469, and 470). Under current SNF PPS policy in 2014, program spending would decrease by about \$415 million, or decrease total IRF payments by 5 percent. Total payment impacts under the MedPAC-recommended SNF alternative model are smaller, at about \$345 million.

Overall, the impact of site-neutral payments on total IRF revenue appears similar across provider types. Nonprofit, for-profit, hospital-based, and freestanding IRFs had Medicare payments decrease by about 4 percent under

site-neutral payments for the three conditions. Site-neutral payments would reduce total base payments slightly more for nonprofit and hospital-based facilities compared with for-profit and freestanding facilities because the former have higher shares of patients with the three conditions. However, we assumed a site-neutral policy would not change add-on payments, which typically add about 9 percent to all IRF base payments on average. Nonprofit and hospital-based facilities receive more of these payments, which lessen the total financial impact of site-neutral payment policy for them. Essentially, while these providers have larger shares of patients with the select conditions, add-on payments make up a larger share of total revenue for these providers and would not be affected by the policy.

Policymakers could consider identifying cases for site-neutral payments, using a combination of the IRF classification of cases and the hospital-assigned MS-DRG classification. Recall that we have used MS-DRGs from the preceding acute hospital stay to identify and compare patients treated in IRFs and SNFs for similar conditions (but neither IRFs nor SNFs use MS-DRGs for payment purposes). The strength of using hospital-assigned MS-DRGs is that the assignment of the condition would be separate from the provider of PAC service (and any payment incentives a PAC provider might have regarding coding of the condition). Considering the IRF classification in addition to the

Estimating the impact of site-neutral payments to inpatient rehabilitation facilities

To estimate the difference in payment at the case level, we compared base payments to inpatient rehabilitation facilities (IRFs) under current (2014) IRF policy with the two skilled nursing facility (SNF) payment scenarios. We adjusted base payments for the provider's wage index and rural status according to the respective IRF and SNF payment policies. We assumed that a site-neutral policy would not affect the add-on payments to IRFs, and therefore, we did not consider them in our comparisons at the case level. We used 2014 IRF prospective payment system (PPS) payment rates for the case-mix group (CMG) and tier of each case and the 2011 case counts and mix of conditions. Because each condition was associated with a wide distribution of IRF CMGs, we estimated a weighted-average IRF payment based on the distribution of cases across CMGs (weighted by the number of patients with each CMG).

To calculate SNF payments to IRFs, we converted the SNF day-based payment into a stay-based payment, using the average length of stay in SNFs by condition. This approach establishes IRF payments equal to those made to SNFs, basing the IRF payment on the average payment made to SNFs by condition. We subdivided major joint replacement cases into total hip, partial hip, and knee replacement because the lengths of stay are considerably different. To calculate stay-based payments to SNFs, we summed the day-based payments across the stay.

To estimate the total financial impacts of site-neutral payments on IRFs in 2014, we estimated payments under the IRF PPS for all IRF cases and added or subtracted the impact of paying IRFs the SNF rates for the number of cases with the select conditions (added payments associated with hip and femur procedures and subtracted reductions to payments for stroke and major joint replacement cases). We used 2014 IRF PPS payment rates and 2011 case counts and mix of conditions.

To estimate payments for all IRF cases, we estimated total base payments (adjusting for provider wage index and rural status), using 2014 IRF PPS payment rates for the CMG and tier of each case. We increased the aggregate adjusted base payments by 9 percent for add-on payments, reflecting the 2011 share that the payments for having teaching programs, treating low-income patients, and having high-cost outliers added to Medicare base payments to IRFs. We did not preserve the additional payments rural IRFs receive as an add-on payment here because the SNF PPS has its own rural adjustment (separate urban and rural base rates), so IRF compensation for rural status would be included in the SNF payment rates for these cases. To estimate the number of select-condition cases in the IRF, we used 2011 hospital claims with the relevant diagnosis related groups and with IRFs as the discharge destination. To estimate the impact of paying SNF rates to IRFs for the select conditions, we multiplied this count by the average calculated payment for each condition under the IRF and SNF PPSs. ■

preceding MS-DRG should be explored to ensure similar rates are paid for patients with similar care needs.

Considerations for implementing a site-neutral policy

To implement a site-neutral policy, CMS would retain the IRF PPS, along with the current SNF PPS (or the MedPAC-recommended alternative SNF PPS). For each site-neutral case treated in an IRF, the base rate would be calculated using a SNF PPS, while the case's add-on payments for teaching program status, share of low-income patients, and high-cost outliers would be calculated on the IRF base rate. For the cases in the IRF that are not affected by the site-neutral policy, payment

would continue to be calculated according to the IRF PPS. Policymakers would need to decide whether to adopt site-neutral policies for conditions for which the SNF stay-based payments are higher.

One issue for consideration is whether the relative weights associated with IRF case-mix groups should be recalibrated to ensure that payments in aggregate do not increase as a result of a site-neutral policy and waived regulations. If certain regulations were waived for site-neutral conditions, IRF costs associated with treating these conditions may fall. In the absence of other changes, a decrease in IRF costs for these conditions would result in an increase in the relative weights for non-site-neutral conditions, which would in turn result in higher payment

Estimating skilled nursing facility payments under the alternative prospective payment system design

To estimate payments to skilled nursing facilities (SNFs) under the Commission's alternative design, we began with an alternative design developed by researchers at the Urban Institute (Garrett and Wissoker 2008, Wissoker and Garrett 2014). These designs estimate therapy and nontherapy ancillary (NTA) service costs for each patient's stay using data from the patient assessments, SNF claims, and SNF cost reports. The design uses a mix of patient and stay characteristics to predict therapy and NTA costs; nursing payments were based on the current prospective payment system (PPS). Payments for therapy and NTA services varied based on a patient's age, the use of special services (such as intravenous medications or ventilator care), indicators of mental and cognitive status, ability to perform activities of daily living, and 20 categories of diagnoses and an HIV indicator (Table 6-12). The design also includes characteristics of the stay: whether the patient was assigned to a rehabilitation case-mix group and a proxy for length of stay (see note to Table 6-12 for more detail).

Separate Poisson regression models (to reflect the skewed distribution of costs) were developed to predict per day NTA and therapy costs using characteristics of the patient and the stay. Although the NTA and therapy models use the same predictors, the coefficients (the direction and magnitude of a predictor's effect on costs) are often 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. Some characteristics (such as 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.

The nursing component of the 2014 SNF PPS was used to establish payments for nursing services.¹⁸ To establish the NTA "pool" of payments, we subtracted the average share of NTA costs of the nursing costs from the nursing component. Per day payments for NTA services were estimated using patient and stay characteristics.

**TABLE
6-12**

Patient and stay characteristics used to predict NTA and therapy costs in alternative SNF PPS design

Patient characteristics

- Age
- Special services: IV medication, respiratory care, chemotherapy, hospice care
- Physical and mental health status: Infection, serious skin ulcer, nursing case-mix index, incontinence, and mental and cognitive function
- Ability to perform activities of daily living: mobility and self-care measures
- Diagnoses (20 categories) and an HIV indicator

Stay characteristics

- Indicator the patient was assigned to any rehabilitation case-mix group
- Length of stay proxy

Notes: NTA (nontherapy ancillary), SNF (skilled nursing facility), PPS (prospective payment system), IV (intravenous). We assumed patients treated in inpatient rehabilitation facilities would be assigned into an ultra-high rehabilitation case-mix group. Respiratory care indicates oxygen (linked to specific conditions), tracheostomy care, or ventilator care. A length of stay proxy (instead of the actual length of stay) was used so that the model could be adopted for determining payments to a SNF. Many SNFs bill Medicare periodically, rather than at the end of the stay. When a SNF filed a claim, it would not know the final stay length, but it would know which patient assessment (the 5-day, the 14-day, etc.) had been completed for the patient.

Source: Analyses prepared for MedPAC by the Urban Institute, 2014.

(continued next page)

Estimating skilled nursing facility payments under the alternative prospective payment system design (cont.)

We created a proxy for per discharge payment by summing the day-based payments for each day of the stay. The aggregate SNF payments under the alternative design were assumed to equal those under current policy.

Because the alternative design was to be used to estimate payments to IRFs, the predictive models had to be revised in minor ways to accommodate differences in the data collected by IRFs and SNFs. For example, whether a patient had difficulty swallowing helps predict cost per day, but the questions in the assessments are sufficiently different that this patient characteristic was not included in the updated model. The function items were built from relevant questions in the IRF–Patient Assessment Instrument, and a crosswalk to the Minimum Data Set assessments for nursing homes put the items on the same scale (Mallinson et al. 2012). Because the patient assessments used in each setting include different questions regarding cognition and incontinence, we approximated these patient abilities using prescription drug hierarchical condition categories and diagnostic information from the SNF claims and IRF patient assessment instrument.

We assumed all IRF stays would be classified into one of the ultra-high SNF case-mix groups and used the IRF patient assessments to estimate the activities of daily living. To be consistent with IRF payment policy, which has a short-stay outlier policy to pay for unusually short stays, we excluded SNF stays of three or fewer days from the model estimation and simulations. We also excluded patients who died during the qualifying stays or within 30 days of discharge so that these results could be compared with our other analyses.

Compared with SNF 2014 policy, the alternative SNF PPS design explains considerably more of the variation across SNF stays in NTA costs and the same amount of the variation in therapy costs. At the stay level, current SNF PPS policy explains none of the variation in NTA costs, while the alternative design explains 19.5 percent. Regarding therapy services, the current PPS policy explains 19.4 percent of the variation in therapy costs compared with 19 percent by the alternative design. The alternative design would result in much more targeted payments for NTA services and equally accurate payments for therapy while removing the incentive to furnish therapy as a way to boost payments.

Another measure of the performance of the SNF alternative design is whether it results in payments that are proportional to costs at the facility level. A case-mix index (CMI) coefficient measures the proportionality of payments to costs. A value of 1.0 indicates payments would be equal to costs. A value less than 1.0 indicates that facilities with above-average costs would be overpaid and facilities with below-average costs would be underpaid. A value greater than 1.0 indicates that as costs increase, payments do not keep pace, resulting in underpayment for facilities with a relatively high-cost case mix. Current policy results in systematic overpayments for NTA and therapy services for facilities with an above-average case mix and underpayment for facilities with a below-average case mix (CMI coefficient of 0.08 for NTA services and a CMI coefficient of 0.42 for therapy services). In contrast, the alternative design results in nearly proportional payments for NTA services (CMI coefficient = 0.93) and far more proportional payments for therapy services (CMI coefficient = 1.11). ■

levels for the non-site-neutral conditions. While payment levels for the site-neutral conditions would be held at SNF levels, policymakers should consider whether payment levels for non-site-neutral conditions should be allowed to rise as a result of waived regulations for the site-neutral conditions. All things being equal, increase in the weights of non-site-neutral conditions would offset payment reductions. The Commission will be considering strategies to address this issue.

If implemented, a common set of patient assessment information would facilitate comparing quality of care and outcomes of patients treated in both settings. In March 2014, the Commission recommended a starting set of items for all PAC providers to report. This set, along with diagnosis data from inpatient hospital claims, would allow us to risk adjust and compare outcome measures (including changes in self-care and mobility, readmission rates, and mortality rates) and costs.

It is not known how IRF patient mix and volume would change in response to a site-neutral policy. When confronted with changes to the compliance thresholds, IRF patient volume declined overall, and IRFs shifted their mix of patients away from conditions that no longer counted toward the thresholds (Medicare Payment Advisory Commission 2014). It is possible that IRFs would again adjust their mix of cases, toward cases paid under the IRF PPS, with site-neutral cases shifted to SNFs. If IRFs no longer admitted cases subject to site-neutral payments, one question is whether the SNF industry has adequate capacity to treat these cases. Although average nursing facility occupancy rates are relatively high (84 percent), the additional volume for the three site-neutral conditions is relatively small. We estimate that the average SNF occupancy rates would increase less than 1 percentage point, though rates would vary by market and could make accessing a SNF bed more difficult in markets with even higher occupancy rates. However, in certain markets, patients with conditions paid under a site-neutral policy could face a more narrow choice of PAC options if IRFs opted to no longer admit them.

Alternatively, IRFs may elect to continue to treat the cases subject to the site-neutral policy but receive lower payments. Even with lower payments, the cases may still be profitable for some IRFs, may still cover the facility's fixed costs (and be better than an empty bed), or may improve total hospital margins in the case of hospital-based IRFs. Because IRFs may change the mix of services, therapy intensity, and length of stays for cases paid under a site-neutral policy, it will be important to monitor outcomes and the quality of care furnished to these patients.

A facility's willingness to admit site-neutral cases may also depend on other factors, such as how quickly a facility can modify its variable costs. Some variable costs, such as the amount of rehabilitation a patient receives or the number of face-to-face physician visits, would be relatively easy to modify. Other factors, such as the level and mix of staffing, may be easier to implement in larger facilities that could adjust their staffing for an entire nursing unit. In addition, market characteristics, such as the presence of other IRFs or SNFs with specialized capabilities to treat IRF-compliant cases, would affect an IRF's ability to shift its patient mix toward cases not affected by a site-neutral policy. IRFs located in markets without competitors might be more able to shift their mix of patients toward patients with conditions that the average

SNF is not staffed or equipped to manage, such as patients receiving rehabilitation care for burns or traumatic brain injury.

Cost sharing could increase for some beneficiaries whose conditions are paid under a site-neutral policy. Beneficiaries transferred to an IRF from an acute care hospital pay no additional deductible but are responsible for a copayment (\$296 a day in 2013) for the 61st through 90th days.¹⁹ Under SNF payment rules, beneficiaries are responsible for a daily copayment (\$152 a day) beginning on day 21 of the stay. Beneficiaries whose stays exceeded 20 days would be responsible for the copayments for days beyond day 20. However, most beneficiaries have some form of supplemental coverage that may cover the SNF and IRF copayments.

Options for waiving current IRF requirements

If site-neutral payments for select PAC conditions were implemented, the Commission believes CMS should consider waiving some of the IRF regulations for those case types, thus leveling the playing field with respect to regulatory requirements. Otherwise, IRFs would continue to be subject to requirements that raise their costs—such as the frequency of physician supervision and providing an intensive therapy program—yet be paid as SNFs. CMS could consider waiving regulations that apply to individual cases, which would be easier to implement than requirements that apply to the entire facility. For example, the coverage criteria that patients must require supervision by a rehabilitation physician (satisfied by physician face-to-face visits at least three days a week) could be waived for individual patients. Waiving certain IRF regulations for select conditions would allow IRFs to function more like SNFs in treating those conditions. IRFs could choose to provide less intensive therapy or medical care for individual patients, based on the patients' particular needs. For example, IRFs could have more flexibility to provide fewer than three hours of therapy each day or to vary the number of physician face-to-face visits each week, as IRF clinicians deemed necessary. Waiving requirements would prevent Medicare's administrative contractors from denying claims for care that did not meet IRF requirements. Medicare would need to carefully monitor outcomes (such as readmissions and improvement in functional status) to ensure that quality of care was not eroded.

The illustrative site-neutral payment policy highlights one shortcoming of the 60 percent threshold requirement—that many of the conditions are too broadly defined. The 60 percent rule (formerly 75 percent rule) was established to distinguish IRFs from inpatient acute hospitals. A case that is paid a SNF rate because it does not require IRF-level care should not, at the same time, be counted toward meeting the threshold designed to ensure that IRFs treat a minimum number of patients who require IRF care. One option in considering the calculation of the compliance threshold would be to exempt the site-neutral conditions that currently count toward the 60 percent threshold—stroke and hip fracture MS-DRG cases and a subset of joint replacement cases—from the calculation.

Another option would be to lower the threshold while more narrowly defining the qualifying conditions to identify cases that require IRF-level care. The Commission has commented before that more refined criteria are needed to identify patients appropriate for IRFs (Medicare Payment Advisory Commission 2013). Lowering the threshold while tightening the qualifying criteria could enable IRFs to have more flexibility in their patient mix while better ensuring that they serve the most appropriate patients. The criteria have already narrowly defined the subset of hip and knee replacement cases and arthritis conditions that count toward the 60 percent rule. For hip and knee replacement cases, only patients with bilateral procedures, who have a body mass index ≥ 50 , or are age 85 or older count toward compliance; other joint replacement cases do not. There are likely similar subsets of stroke and hip fracture patients who are more appropriate for IRF-level care. For example, all stroke cases currently count toward the compliance threshold, regardless of whether the patient is severely impaired or has no paralysis. Cases with specific characteristics that require IRF-level care, such as certain medical complexities or particular rehabilitation needs, could potentially be exempted from site-neutral payments and qualify toward the compliance threshold.

There is considerable industry interest in providing high-intensity rehabilitation without the IRF regulatory requirements. One company has developed SNF facilities with intensive medical and rehabilitation care capabilities that it markets to MA plans as able to deliver IRF-level care at rates that are lower than IRF payments. Some large SNF chains have developed intensive units focused on the rehabilitation and recovery of high-acuity, short-stay patients. The IRF industry has supported testing a provider model that

could provide a range of rehabilitation and medical needs without IRF requirements. In this “continuing care hospital,” payments would be based on patient characteristics rather than different setting-specific payments.

Conclusion

This analysis evaluates paying SNF rates to IRFs when treating conditions treated in both IRFs and SNFs. While a few IRF conditions, such as burns, spinal cord injury, or traumatic brain injury, may typically require hospital-level care, many other conditions—particularly other conditions not counted in the 60 percent threshold and subsets of the 13 qualifying conditions—may be appropriate for care in a SNF. These other conditions may ultimately be appropriate for site-neutral payments. This approach is consistent with the incentives of ACOs and MA plans to consider the lowest cost setting where patients can be appropriately treated.

Selecting a handful of conditions to study allowed us to examine the concept of site-neutral payments between IRFs and SNFs. We found that the patients and risk-adjusted outcomes for the orthopedic conditions were similar and represent a strong starting point for a site-neutral policy. Patients receiving rehabilitation services after a stroke were more variable, and more work needs to be done to narrow the definition of cases that require IRF-level care. Waiving certain IRF rules for the conditions selected would allow IRFs to vary the services they furnish to patients and put them on equal footing with SNFs.

Site-neutral payments can be an important building block in establishing payments across PAC settings based on patient characteristics, rather than where patients are treated. Just as the PAC-PRD concluded that a common payment system may be possible for patients who could appropriately be treated in different settings, we found that the SNF PPS, especially an alternative design, could be used to pay IRFs treating similar patients. Even if estimated savings are modest, the approach begins the process of considering a common payment system across PAC settings.

The Commission will continue to explore site-neutral payments between SNFs and IRFs. These considerations may include narrower definitions of stroke cases and exploring other conditions that lend themselves to this policy. ■

Endnotes

- 1 For more information, see the Commission's SNF *Payment Basics* document at http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_SNF.pdf.
 - 2 Days assigned to a case-mix group that considers diagnoses or special service use (such as ventilator or tracheostomy care) account for less than 10 percent of SNF days.
 - 3 There are five special case-mix groups for patients discharged before the fourth day (short-stay outliers) and for those few who die during their stay.
 - 4 The first and highest paid tier includes codes for comorbidities associated with renal dialysis, tracheostomy, and paralysis of vocal cords. The codes in the second tier are related to difficulty swallowing and certain infections. The third tier includes a variety of comorbidities associated with over 900 International Classification of Diseases, Ninth Revision, Clinical Modification codes, including paralysis, pneumonia, morbid obesity, and a range of infections. The fourth tier is for patients with no comorbidities associated with higher costs of care.
 - 5 For more information, see the Commission's IRF *Payment Basics* document at http://www.medpac.gov/documents/MedPAC_Payment_Basics_13_IRF.pdf.
 - 6 The 13 qualifying conditions are stroke; spinal cord injury; congenital deformity; amputation; major multiple trauma; hip fracture; brain injury; neurological disorders; burns; three arthritis conditions for which appropriate, aggressive, and sustained outpatient therapy has failed; and hip or knee replacement when bilateral, when body mass index ≥ 50 , or when patient is age 85 or older.
 - 7 While the stays of beneficiaries treated in IRFs are much shorter than stays in freestanding SNFs, they are more comparable to stays in hospital-based SNFs. Hospital-based SNFs represent 5 percent of SNF facilities (Medicare Payment Advisory Commission 2014). Previous work done by the Commission found that patients who used hospital-based units were younger and had a lower severity of illness (Medicare Payment Advisory Commission 2007). Although patients admitted to hospital-based SNFs had shorter stays, their use of a second PAC service was higher and a lower share of patients was discharged home compared with patients discharged to freestanding SNFs.
 - 8 The majority of beneficiaries (69 percent) live in HSAs with at least one IRF.
 - 9 Although Medicare pays SNFs on a day basis and IRFs on a discharge basis, the units can be considered comparable because both include all services furnished during their stays.
- 10 Certain infrequently furnished high-cost services are excluded from the SNF payment and paid for separately, such as chemotherapy, dialysis, and computed tomography scans.
 - 11 By definition, 80 percent of SNF patients fall between the 10th and 90th percentiles.
 - 12 CMS's contractor developed standardized measures of self-care and mobility using items that ranged from 0 (*most dependent/lowest functional status*) to 100 (*completely independent/highest functional status*).
 - 13 The R^2 values were 2 percent for joint replacement cases and 3 percent for hip and femur procedures.
 - 14 The R^2 value was 6 percent for stroke cases.
 - 15 The R^2 value was 0.2 percent.
 - 16 Because there are only four IRFs in markets without SNFs, the readmission rates for IRFs in markets with both types of facilities are the same as the rates for all markets.
 - 17 In the analysis of readmission rates, minor surgical procedures (including hip fracture) and major surgical procedures (including major joint replacement) made up 71 percent of the musculoskeletal group. Stroke patients made up just over half (52 percent) of the nervous system group.
 - 18 In the analysis of changes in function, major and minor surgical procedures made up 68 percent of the musculoskeletal group, and stroke patients made up 47 percent of the nervous system group.
 - 19 To estimate payments under the alternative design, we modified the nursing relative weights in 2014 to remove the effects of the policy decision to lower the nursing weights for select case-mix groups when CMS corrected the payment rates in 2012 (White 2013). In 2012, CMS differentially lowered rates across the case-mix groups as a way to shift payments from rehabilitation case-mix groups to clinically complex and special care case-mix groups. In estimating 2014 payments for the alternative design, we lowered the 2012 nursing weights for all case-mix groups by the amount CMS estimated the adjustment should have been before differentially adjusting payments across case-mix groups (Centers for Medicare & Medicaid Services 2012). For estimating current SNF payments, we used the current policy's nursing relative weights.
 - 20 Beneficiaries admitted from the community were responsible for a deductible of \$1,184 in 2013. Almost all IRF patients (95 percent) are admitted to an IRF directly from an acute care hospital.

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