

CHAPTER

# 10

---

**Inpatient rehabilitation  
facility services**

---

**R E C O M M E N D A T I O N**

- 10** The Congress should reduce the fiscal year 2019 Medicare payment rate for inpatient rehabilitation facilities by 5 percent.

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

.....  
*(Additionally, the Commission reiterates its March 2016 recommendations on the inpatient rehabilitation facility prospective payment system. See text box, p. 276.)*

## Inpatient rehabilitation facility services

### Chapter summary

Inpatient rehabilitation facilities (IRFs) provide intensive rehabilitation services to patients after illness, injury, or surgery. Rehabilitation programs are supervised by rehabilitation physicians and include services such as physical and occupation therapy, rehabilitation nursing, speech–language pathology, and prosthetic and orthotic services. In 2016, Medicare spent \$7.7 billion on fee-for-service (FFS) IRF care provided in about 1,200 IRFs nationwide. About 350,000 beneficiaries had more than 391,000 IRF stays. On average, Medicare accounts for about 60 percent of IRF discharges.

### Assessment of payment adequacy

Our indicators of Medicare payment adequacy for IRFs are positive.

**Beneficiaries’ access to care**—Our analysis of IRF supply and volume of services provided suggests that capacity remains adequate to meet demand.

- **Capacity and supply of providers**—After declining for several years, the total number of IRFs increased in 2014 and continued to grow through 2016, reaching 1,188 facilities nationwide. Over time, the number of hospital-based and nonprofit IRFs has declined, while the number of freestanding and for-profit IRFs has increased. In 2016, the average IRF occupancy rate remained at 65 percent, indicating that capacity is more than adequate to meet demand for IRF services.

### In this chapter

- Are Medicare payments adequate in 2018?
- How should Medicare payments change in 2019?

- **Volume of services**—Following a period of low volume growth, the number of FFS cases grew more quickly between 2015 and 2016, rising 2.4 percent to almost 391,000 cases.

**Quality of care**—The Commission tracks three broad categories of IRF quality indicators: risk-adjusted facility-level change in functional and cognitive status during the IRF stay, rates of discharge to the community and to skilled nursing facilities, and rates of readmission to an acute care hospital. Most measures were steady or improved between 2011 and 2016.

**Providers' access to capital**—The parent institutions of hospital-based IRFs continue to have good access to capital. The major freestanding IRF chain, which accounted for almost half of all freestanding IRFs in 2016 and about a quarter of all Medicare IRF discharges, also has good access to capital. This assessment is reflected in the chain's continued expansion. We were not able to determine the ability of other freestanding facilities to raise capital.

**Medicare payments and providers' costs**—Following a period of steady growth between 2009 and 2015, the aggregate IRF margin declined in 2016 but remained high at 13.0 percent. Medicare margins in freestanding IRFs declined by 1.2 percentage points in 2016 but, at 25.5 percent, remained very high. Hospital-based IRF margins were comparatively low, but one-quarter of hospital-based IRFs had Medicare margins greater than 11 percent, indicating that many hospitals can manage their IRF units profitably. Lower margins in hospital-based IRFs were driven largely by higher unit costs. Several factors account for these higher costs. First, hospital-based IRFs are smaller than their freestanding counterparts and may achieve fewer economies of scale. Second, hospital-based IRFs appear to be less stringent in their cost control, perhaps because they are far less likely than freestanding IRFs to be for profit and therefore are likely to be less focused on controlling costs to maximize returns to investors. Third, there are notable differences in hospital-based and freestanding IRFs' mix of cases, which may indicate differences in profitability across case types. If some case types are less profitable, facilities that admit more of these cases will have lower margins than facilities that admit fewer of these cases. Finally, while not definitive, evidence indicates that IRFs' assessments of patients' motor and cognitive function are not reliably consistent across providers. To the extent that hospital-based IRFs routinely assess their patients as less disabled than do their freestanding counterparts, their payments—and margins—will be systematically lower. Given the difference in financial performance across IRFs, we examined freestanding and hospital-based IRFs' marginal profits to assess whether both provider types have a financial incentive to expand the number of Medicare beneficiaries they serve. We found that

Medicare payments exceed marginal costs by a substantial amount—19.3 percent for hospital-based IRFs and 40.9 percent for freestanding IRFs—suggesting that IRFs with available beds have an incentive to admit Medicare patients. This finding is a very positive indicator of patient access, even with respect to IRFs with lower margins. We project an aggregate Medicare margin of 11.9 percent for IRFs in 2018.

For fiscal years 2009 through 2017, the Commission recommended a 0 percent update to the IRF payment rate. As the aggregate margin neared historic highs, however, the Commission recommended in March 2017 that the Congress reduce the 2018 IRF payment rate by 5 percent. Since such action was not taken and since, in the absence of legislative action, CMS is required by statute to apply an adjusted market basket increase, payments have continued to rise. At the same time, growth in costs historically has been low. From 2009 to 2015, the cumulative growth in cost per discharge was 8.5 percent, well below the increase in the market basket over the period. The gap between payments and costs per case for freestanding IRFs has grown even wider: From 2009 to 2015, the cumulative increase in payments per case for freestanding IRFs was 14.6 percent, compared with 4.2 percent growth in costs per case. In 2015, margins for freestanding IRFs reached an all-time high of 26.7 percent. In 2016, the gap between payments and costs narrowed somewhat as per case cost growth (3.4 percent in aggregate) exceeded payment growth (3.2 percent in aggregate) for the first time since 2008. Still, the aggregate margin of 13.0 percent in 2016 and our projected IRF margin of 11.9 percent in 2018 indicate that aggregate Medicare payments continue to substantially exceed the costs of caring for beneficiaries. These overpayments contribute to the long-run sustainability challenges of the Medicare program.

On the basis of these factors, the Commission recommends that the IRF payment rate for fiscal year 2019 be reduced by 5 percent. The recommendation about the level of payments to IRFs is made in the context of the Commission's recommendation (discussed in the chapter on post-acute care (Chapter 7)) to establish IRF payments using a blend of the current IRF prospective payment system (PPS) relative weights and the unified post-acute care PPS relative weights beginning in 2019. A blend of the relative weights would redistribute payments within the IRF setting by increasing payments for medically complex patients and lowering payments for patients with less complex conditions. The recommendation would narrow the differences in financial performance across providers based on their mix of patients, which enables the Commission to recommend, and policymakers to implement, a level of payments that is better aligned with the costs of care. In addition, the Commission reiterates its March 2016 recommendations

that the high-cost outlier pool be expanded to further redistribute payments in the IRF payment system and reduce the impact of misalignments between IRF payments and costs and that the Secretary should conduct focused medical record review of IRFs that have unusual patterns of case mix and coding and reassess the inter-rater reliability of the IRF assessment tool to improve the accuracy of payments and protect program integrity. ■

---

## Background

---

After illness, injury, or surgery, some patients need intensive, inpatient rehabilitative care, including physical, occupational, and speech therapy. Such services can be provided in inpatient rehabilitation facilities (IRFs).<sup>1</sup> To qualify as an IRF, a facility must meet Medicare's conditions of participation for acute care hospitals and must be primarily focused on treating conditions that typically require intensive rehabilitation, among other requirements. IRFs can be freestanding facilities or specialized units within acute care hospitals. To qualify for a covered IRF stay, a beneficiary must be able to tolerate and benefit from intensive therapy and must have a condition that requires frequent and face-to-face supervision by a rehabilitation physician. Other patient admission criteria also apply. In 2016, Medicare spent \$7.7 billion on IRF care provided in about 1,200 IRFs nationwide. About 350,000 beneficiaries had almost 391,000 IRF stays. On average, Medicare accounts for about 60 percent of IRF discharges.

Since January 2002, Medicare has paid IRFs under a per discharge prospective payment system (PPS).<sup>2</sup> Under the IRF PPS, Medicare patients are assigned to case-mix groups (CMGs) based on the patient's primary reason for inpatient rehabilitation, age, and level of motor and cognitive function. Within each of these CMGs, patients are further categorized into one of four tiers based on the presence of specific comorbidities that have been found to increase the cost of care. Each CMG tier has a designated weight that reflects the average relative costliness of cases in the group compared with that of the average Medicare IRF case.<sup>3</sup> The CMG weight is multiplied by a base payment rate and then adjusted to reflect geographic differences in the wages IRFs pay. The payment is further adjusted based on the IRF's share of low-income patients. Additional adjustments are made for IRFs that are teaching facilities and for IRFs located in rural areas.

The IRF PPS has outlier payments for patients who are extraordinarily costly. High-cost outlier payments are intended to offer providers some financial protection against exceptionally high-cost cases. Outlier payments can also help ensure continued access for patients who are predictably more likely than others to be exceptionally costly compared with the usual payment for the case type. Medicare provides an outlier payment, in addition to the usual PPS payment, for a case if its costs exceed a threshold. The outlier payment for a case is equal to 80

percent of costs above the threshold. The cost threshold is equal to the sum of the IRF's usual payment for the CMG plus a fixed loss amount. CMS sets the fixed loss amount each year at a level that it estimates will result in aggregate outlier payments exhausting the funds available in the outlier pool, which is currently set at 3 percent of total IRF payments. (For fiscal year 2018, the fixed-loss amount is \$8,679, adjusted for the applicable wage index and other facility-specific characteristics.) The outlier pool is funded by an offset to the national base payment amount, which reduces all CMG payment rates by the same percentage.

### Medicare facility requirements for IRFs

To qualify as an IRF for Medicare payment, facilities must meet the Medicare conditions of participation for acute care hospitals. They must also:

- have a preadmission screening process to determine that each prospective patient is likely to benefit significantly from an intensive inpatient rehabilitation program;
- ensure that the patient receives close medical supervision and provide—through qualified personnel—rehabilitation nursing, physical therapy, and occupational therapy and, as needed, speech–language pathology and psychological (including neuropsychological) services, social services, and orthotic and prosthetic services;
- have a medical director of rehabilitation with training or experience in rehabilitation who provides services in the facility on a full-time basis for freestanding IRFs or at least 20 hours per week for hospital-based IRF units;
- use a coordinated interdisciplinary team led by a rehabilitation physician that includes a rehabilitation nurse, a social worker or case manager, and a licensed therapist from each therapy discipline involved in the patient's treatment;
- have a plan of treatment for each patient that is established, reviewed, and revised as needed by a physician in consultation with other professional personnel who provide services to the patient; and
- meet the compliance threshold, which requires that no less than 60 percent of all patients admitted to an IRF have as a primary diagnosis or comorbidity at least 1 of 13 conditions specified by CMS.<sup>4</sup> The intent of the compliance threshold is to distinguish

**TABLE  
10-1**

**The share of FFS IRF cases with neurological conditions and brain injury continued to grow, 2004–2016**

Condition	Percent of IRF Medicare FFS cases				Meets compliance threshold <sup>a</sup>	Percentage point change		
	2004	2008	2015	2016		2004–2008	2008–2015	2015–2016
Stroke	16.6%	20.4%	19.6%	20.1%	yes	3.8	–0.8	0.5
Other neurological conditions	5.2	8.0	13.0	13.7	yes	2.9	5.0	0.7
Fracture of the lower extremity	13.1	16.0	11.5	10.8	yes	3.0	–4.5	–0.7
Debility	6.2	9.1	10.7	10.7	no	2.9	1.6	0.0
Brain injury	3.9	7.0	9.3	9.9	yes	3.0	2.3	0.6
Other orthopedic conditions	5.2	6.1	7.9	8.2	no	0.9	1.8	0.3
Cardiac conditions	5.3	4.6	6.0	6.1	no	–0.6	1.3	0.1
Major joint replacement of lower extremity	24.1	13.1	6.8	5.5	<sup>b</sup>	–11.0	–6.3	–1.3
Spinal cord injury	4.2	4.3	4.7	4.9	yes	0.1	0.4	0.2
All other	16.3	11.3	10.6	10.1	<sup>c</sup>	–5.0	–0.7	–0.4

Note: FFS (fee-for-service), IRF (inpatient rehabilitation facility). “Other neurological conditions” includes multiple sclerosis, Parkinson’s disease, polyneuropathy, and neuromuscular disorders. “Fracture of the lower extremity” includes hip, pelvis, and femur fractures. Patients with debility have generalized deconditioning not attributable to other conditions. “Other orthopedic conditions” excludes fractures of the hip, pelvis, and femur, and hip and knee replacements. “All other” includes conditions such as amputations, arthritis, and pain syndrome. All Medicare FFS IRF cases with valid patient assessment information were included in this analysis. Yearly figures presented in the table are rounded, but figures in the percentage point change columns were calculated using unrounded data.

<sup>a</sup>The compliance threshold requires that at least 60 percent of an IRF’s patients have 1 of 13 specified diagnoses or have a comorbidity that could cause significant decline in functional ability such that the patient requires intensive rehabilitation. Some FFS cases with conditions that do not meet the compliance threshold could thus be counted toward the threshold if they had certain comorbidities.

<sup>b</sup>Cases admitted for rehabilitation after major joint replacement of the lower extremity count toward the compliance threshold if joint replacement was bilateral, if the patient had a body mass index of 50 or greater, or if the patient was age 85 or older.

<sup>c</sup>Conditions in the “all other” category that meet the compliance threshold include congenital deformity, lower-limb amputations, major multiple trauma, burns, and certain arthritis cases.

Source: MedPAC analysis of Inpatient Rehabilitation Facility–Patient Assessment Instrument data from CMS.

IRFs from acute care hospitals. If an IRF does not meet the compliance threshold, then Medicare pays for all its cases on the basis of the inpatient hospital PPS rather than the IRF PPS.

**Medicare coverage criteria for beneficiaries**

Medicare applies additional criteria that govern whether IRF services are covered for an individual Medicare beneficiary. For an IRF claim to be considered reasonable and necessary, the patient must be reasonably expected to meet the following requirements at admission:

- The patient requires active and ongoing therapy in at least two modalities, one of which must be physical or occupational therapy.

- The patient can actively participate in and benefit from intensive therapy that most typically consists of three hours of therapy a day at least five days a week.
- The patient is sufficiently stable at the time of admission to actively participate in the intensive rehabilitation program.
- The patient requires supervision by a rehabilitation physician. This requirement is satisfied by physician face-to-face visits with a patient at least three days a week.

**Patterns of use in IRFs**

In 2004, CMS began to consistently enforce the IRF compliance threshold and enacted revisions to some of the qualifying conditions.<sup>5</sup> The combination of renewed enforcement of the threshold and additional restrictions

**TABLE  
10-2**

**Mix of Medicare FFS IRF cases differed by provider type, selected conditions, 2016**

Condition	Freestanding		Hospital based	
	For profit	Nonprofit	For profit	Nonprofit
Stroke	15%	25%	20%	25%
Other neurological conditions	19	7	11	10
Fracture of the lower extremity	10	9	14	11
Debility	11	8	12	10
Brain injury	9	11	10	10
Other orthopedic conditions	11	7	6	6

Note: FFS (fee-for-service), IRF (inpatient rehabilitation facility). "Other neurological conditions" includes multiple sclerosis, Parkinson's disease, polyneuropathy, and neuromuscular disorders. "Fracture of the lower extremity" includes hip, pelvis, and femur fractures. Patients with debility have generalized deconditioning not attributable to other conditions. "Other orthopedic conditions" excludes fractures of the hip, pelvis, and femur, and hip and knee replacements. All Medicare FFS IRF cases with valid patient assessment information were included in this analysis.

Source: MedPAC analysis of Inpatient Rehabilitation Facility–Patient Assessment Instrument data from CMS.

resulted—as intended—in a substantial decline in the volume of Medicare patients treated in IRFs. By 2008, the number of IRF discharges had fallen 26 percent, with the biggest declines seen in the number of medically complex (–73 percent), arthritis (–68 percent), and hip and knee replacement (–60 percent) cases. Average case-mix severity and cost per case increased as IRFs shifted their mix of cases to conditions that count toward the threshold, such as stroke, brain injury, and other neurological conditions (Table 10-1). Even after IRF volume stabilized, the growth in other neurological conditions—including multiple sclerosis, Parkinson's disease, neuromuscular disorders, and polyneuropathy—continued. Between 2008 and 2015, the number of IRF discharges with other neurological conditions climbed 76 percent, while the total number of Medicare IRF discharges increased 9 percent (data not shown). The number of discharges with brain injuries (traumatic and nontraumatic combined) rose 45 percent over the same period. Notably, the number of cases with other orthopedic conditions, cardiac conditions, and debility also rose, though less than a third of these cases counted toward the compliance threshold in 2013.<sup>6</sup>

In 2016, CMS eliminated some of the diagnosis codes that can be used to determine compliance.<sup>7</sup> CMS removed these diagnosis codes because, without supporting documentation, they do not provide sufficient information to indicate that the patient would reasonably require intensive inpatient rehabilitation (Centers for Medicare

& Medicaid Services 2014). In a previous analysis using assessment data from 2013, the Commission estimated that, among the most common conditions in IRFs, cases admitted for rehabilitation following hip or knee replacement would be most affected under the new rules, with the share of cases meeting compliance falling from 83 percent to 33 percent (Medicare Payment Advisory Commission 2017). We expected IRFs would shift their mix of cases in response to the policy change to ensure continued compliance with the threshold, and analysis of assessment data from 2016 suggests IRFs have done so. Between 2008 and 2015, the number of IRF cases admitted for lower extremity joint replacement declined, on average, 8 percent per year, but in 2016, the number dropped about 19 percent. Those cases made up 5.5 percent of all IRF cases in 2016, down from 6.8 percent in 2015 (Table 10-1). The number and share of cases with neurological conditions and brain injuries continued to grow. The most common Medicare case type in IRFs continued to be stroke, accounting for 20.1 percent of cases in 2016.

The distribution of case types differs by type of IRF (Table 10-2). For example, in 2016, only 15 percent of cases in freestanding for-profit IRFs were admitted for rehabilitation following a stroke, compared with 25 percent of cases in hospital-based nonprofit IRFs. Likewise, 19 percent of cases in freestanding for-profit IRFs were admitted with other neurological conditions,

roughly double the share admitted to hospital-based IRFs. Cases with other orthopedic conditions also made up a higher share of cases in freestanding for-profit facilities than in other IRFs. By contrast, the share of cases with brain injury was similar across IRF types.

In 2016, 7.6 percent of IRF cases received high-cost outlier payments, although the share varied by case type. For example, 11.7 percent of cases with spinal cord injury and 9.7 percent of stroke cases were high-cost outliers. By contrast, 5.5 percent of cases with other neurological conditions and 4.6 percent of other orthopedic conditions were high-cost outliers. Outlier cases were also distributed unevenly among IRFs. Almost 13 percent of cases in hospital-based IRFs were high-cost outliers compared with 2.5 percent of cases in freestanding IRFs. On average, high-cost outliers had an average length of stay that was almost 8 days longer than non-outlier cases (19.9 days vs. 12.1 days, respectively). Outlier cases were also more likely to have comorbidities that increased case mix (62.5 percent of outlier cases vs. 51.3 percent for non-outlier cases).

### **High-margin IRFs have a different mix of cases**

A previous Commission analysis of differences in the mix of cases across IRFs suggested that patient selection contributes to provider profitability (Medicare Payment Advisory Commission 2016). We found that IRFs with the highest margins in 2013 had a higher share of other neurological cases and a lower share of stroke cases.<sup>8</sup> Further, we observed differences in the types of stroke and other neurological conditions admitted to high-margin and low-margin IRFs. Stroke cases in the highest margin IRFs were two-and-a-half times more likely than those in the lowest margin IRFs to have no paralysis. Likewise, other neurological cases in the highest margin IRFs were almost three times more likely than those in the lowest margin IRFs to have a neuromuscular disorder (such as amyotrophic lateral sclerosis or muscular dystrophy) as opposed to conditions like multiple sclerosis or Parkinson's disease.

As noted in our March 2016 report to the Congress, these findings suggest that, under the IRF PPS, some case types are more profitable than others. The Commission plans to assess variation in costs within the IRF CMGs and differences in relative profitability across CMGs in future analyses. Identifying and reducing variation within CMGs and properly calibrating payments with costs for each group is necessary to avoid overpayments and reduce

financial incentives for providers to admit certain types of cases and avoid others. In the short term, the Commission has recommended that the Secretary effect changes to reduce potential misalignments between IRF payments and costs by redistributing payments within the IRF PPS through the high-cost outlier pool (see text box on March 2016 recommendations, p. 276). Expanding the outlier pool would increase outlier payments for the most costly cases, easing the financial burden for IRFs that have a relatively high share of these cases.

### **Patient assessment may not be uniform across IRFs**

A previous Commission analysis of acute care hospital claims data and data from the Inpatient Rehabilitation Facility–Patient Assessment Instrument (IRF–PAI), while not definitive, strongly suggested that IRFs differ in their assessment of patients' motor and cognitive function (Medicare Payment Advisory Commission 2016). In that analysis, we examined IRF patient assessment data from 2013 and administrative data from immediately preceding acute care hospital stays for those IRF patients.<sup>9</sup> To control for differences in the mix of case types across IRFs, we examined patient characteristics in the IRF and in the preceding acute care hospital stay by patients' type of condition, as coded by the IRF at IRF admission.<sup>10</sup> Our approach allowed us to compare patient characteristics as coded in the acute care hospital with those coded in the IRF. Ideally, we would evaluate IRF patient characteristics by comparing IRF patient assessment data with complete patient assessment information recorded for the beneficiary during the preceding acute care hospital stay. However, because acute care hospitals do not submit patient assessment data to CMS, no such data exist. Nevertheless, though acute care hospital claims data do not provide information about a patient's motor function and provide only limited information about a patient's cognition, they can tell us about patients' diagnoses, severity of illness, and relative resource requirements during the hospital stay preceding admission to the IRF.<sup>11</sup>

Overall, when we compared patients in high-margin and low-margin IRFs, we found that patients in high-margin IRFs were less severely ill and resource intensive during the acute care hospitalization that preceded the IRF stay:

- Patients in high-margin IRFs had, on average, a lower case-mix index in the acute care hospital as well as a lower level of severity of illness and a shorter length of stay.

- Patients in high-margin IRFs were less likely to have been high-cost outliers in the acute care hospital or to have spent four or more days in the hospital intensive care or coronary care unit.

But once patients were admitted to and assessed by the IRF, the average patient profile changed, with patients treated in high-margin IRFs appearing to be more disabled than those in low-margin IRFs (as measured by motor impairment scores assigned by IRFs). This pattern persisted across case types.

We found that the difference in average motor impairment scores between high-margin and low-margin IRFs was particularly wide for stroke cases with no paralysis: Cases in the highest margin IRFs had a motor impairment score that was 18 percent lower, on average, than cases in the lowest margin IRFs. (In IRFs, motor impairment is measured using a 13-item Functional Independence Measure™ (FIM™) scale to assess the level of disability in motor functioning and the burden of care for a patient’s caregivers. Lower scores indicate greater disability and generally result in higher payment.) Indeed, in 2013, nonparalyzed stroke patients in the highest margin IRFs had an average motor FIM score (29.0) that was almost the same as the average motor score of paralyzed stroke patients in the lowest margin IRFs (29.2) (Table 10-3). This finding was surprising because stroke patients with paralysis typically have worse motor function than stroke patients without paralysis. All else being equal, Medicare’s payments for these two types of stroke patients with a motor FIM score of 29 would be the same—even though stroke patients with no paralysis had an IRF length of stay that was, on average, more than two days shorter than that of stroke patients with paralysis.

As noted in our March 2016 report to the Congress, the consistent finding that high-margin IRFs have patients who are, on average, less severely ill in the acute care hospital but appear more functionally disabled upon assessment in the IRF suggests that assessment and scoring practices contribute to greater profitability in some IRFs, especially given the comparatively low level of costs and cost growth observed in high-margin facilities. If providers differ in their assessment and scoring of patients’ motor and cognitive function, payments will not be properly aligned with the resource needs of patients. Some IRFs will receive payments that are too high relative to the costs incurred in treating their patients, while other IRFs will receive payments that are too low.

**TABLE 10-3**

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

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

Note: IRF (inpatient rehabilitation facility). Average motor impairment scores were calculated using the motor Functional Independence Measure™ (FIM™) scored by the IRF. The motor FIM measures the level of disability in motor functioning at IRF admission on a 91-point scale. Higher FIM scores indicate higher levels of function. IRFs were ranked by their 2013 Medicare margins and then sorted into five equal-sized groups (quintiles). Lowest margin IRFs (quintile 1) had a mean margin of -36.6 percent, while highest margin IRFs (quintile 5) had a mean margin of 31.1 percent. Stroke cases with paralysis include patients with left body involvement, right body involvement, and bilateral involvement. Cases that did not have an acute care hospital discharge within 30 days of admission to the IRF were excluded from this analysis.

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

These findings led the Commission to recommend that CMS ensure payment accuracy and help improve program integrity by reviewing medical records merged with IRF patient assessment data, reassessing inter-rater reliability across IRFs, and conducting other research as necessary (see text box on March 2016 recommendations, p. 276).

**Are Medicare payments adequate in 2018?**

To assess whether payments for fiscal year 2018 are adequate to cover the costs providers incur and how much providers’ costs are expected to change in the coming year (2019), we examine several indicators of payment adequacy. Specifically, we assess beneficiaries’ access to care by examining the capacity and supply of IRFs and changes over time in the volume of services provided, quality of care, providers’ access to capital, and the relationship between Medicare payments and providers’ costs.

## The Commission reiterates its March 2016 recommendations on the IRF prospective payment system

### Recommendation 9-2

**The Secretary should conduct focused medical record review of inpatient rehabilitation facilities that have unusual patterns of case mix and coding.**

#### Rationale 9-2

The Commission's finding that high-margin inpatient rehabilitation facilities (IRFs) have patients who are, on average, less severely ill in the acute care hospital but appear more functionally disabled in the IRF suggests the possibility that coding practices contribute to greater profitability in some IRFs. Providers may differ in their assessment of patients' motor and cognitive function, resulting in payments for some IRFs that are too high relative to the costs incurred in treating their patients. To improve the accuracy of payments and protect program integrity, CMS should review medical records merged with IRF patient assessment data, reassess inter-rater reliability across IRFs, and conduct other research as necessary. Because medical record review is resource intensive, CMS should begin by focusing on providers that have an atypical mix of cases, such as a high concentration of neuromuscular disorders and stroke cases without paralysis, and on providers that have anomalous patterns of coding, such as wide discrepancies in their patients' levels of severity as coded in the acute care hospital compared with that coded in the IRF. However, system-wide assessment of payment accuracy is also needed.

#### Implications 9-2

##### Spending

- Implementing this recommendation could result in changes to the payment system that would be budget neutral but could also reduce Medicare's spending on IRF services if CMS were to make payment adjustments to account for assessment and coding differences across providers or for coding changes that do not reflect real case-mix change. CMS would incur some administrative expenses to conduct these activities.

##### Beneficiary and provider

- We do not expect this recommendation to have adverse effects on Medicare beneficiaries with respect to access to care or out-of-pocket spending or on providers' willingness and ability to care for Medicare beneficiaries.

### Recommendation 9-3

**The Secretary should expand the inpatient rehabilitation facility outlier pool to redistribute payments more equitably across cases and providers.**

#### Rationale 9-3

The Commission's finding that high-margin IRFs may be selecting certain types of cases suggests that some case-mix groups (CMGs) may be more profitable than others. At the same time, our finding that IRFs may differ in their assessments of patients' motor and cognitive function suggests that the IRF CMGs may not be adequately capturing differences in patient acuity and costs across cases and providers. The potential for financial loss may therefore be greater for some providers than for others. Expanding the outlier pool would increase outlier payments for the most costly cases, easing the financial burden for IRFs that have a relatively high share of these cases.

#### Implications 9-3

##### Spending

- This recommendation would be implemented in a budget-neutral manner and should not have an overall impact on spending.

##### Beneficiary and provider

- We do not expect this recommendation to have adverse effects on Medicare beneficiaries with respect to access to care or out-of-pocket spending. This recommendation may relieve the financial pressure on some providers and may improve equity among providers by diminishing the effects of inaccurate coding. ■

**TABLE  
10-4**

**The number of for-profit and freestanding IRFs continued to grow in 2016**

Type of IRF	Share of Medicare FFS discharges 2016	Number of IRFs								Average annual change		
		2004	2006	2008	2010	2013	2014	2015	2016	2004-2006	2006-2013	2013-2016
All IRFs	100%	1,221	1,225	1,202	1,179	1,161	1,177	1,182	1,188	0.2%	-0.8%	0.8%
Urban	93	1,024	1,018	1,001	981	977	1,013	1,020	1,026	-0.3	-0.6	1.6
Rural	7	197	207	201	198	184	164	162	162	2.5	-1.7	-4.2
Freestanding	50	217	217	221	233	243	251	262	273	0.0	1.6	4.0
Hospital based	50	1,004	1,008	981	946	918	926	920	915	0.2	-1.3	-0.1
Nonprofit	41	768	758	738	729	677	681	681	676	-0.7	-1.6	0.0
For profit	52	292	299	291	294	322	338	352	370	1.2	1.1	4.7
Government	7	161	168	173	156	155	149	138	133	2.2	-1.1	-5.0

Note: IRF (inpatient rehabilitation facility), FFS (fee-for-service). The number of facilities are for the calendar year. The large decline in the number of rural IRFs between 2013 and 2014 is due primarily to changes in the core-based statistical areas, as defined by the Office of Management and Budget, which determine whether geographic areas are considered urban or rural. Because of these changes, 19 IRFs that were previously considered rural are now designated urban.

Source: MedPAC analysis of Provider of Services data and Medicare Provider Analysis and Review data from CMS.

### Beneficiaries' access to care: IRF supply and service volume suggest sufficient access

We have no direct indicator of beneficiaries' access to IRF care. Although there are criteria for admission to an IRF, it is not clear when IRF care is necessary or beneficial for a given patient or when another, potentially lower cost post-acute care provider (such as a skilled nursing facility (SNF)) could provide appropriate care. The absence of IRFs in some areas of the country makes it particularly difficult to assess the need for IRF care since beneficiaries in areas without IRFs presumably receive similar services in other settings. Nevertheless, our analysis of IRF supply and volume of services provided suggests that capacity remains adequate to meet demand.

### Number of IRFs and occupancy rates suggest adequate capacity and supply

After declining for several years, the total number of IRFs increased in 2014 and continued to grow through 2016 to 1,188 facilities nationwide (Table 10-4). In general, IRFs are concentrated in states that have large Medicare populations. IRFs are not the sole provider of

rehabilitation services in communities; SNFs also provide inpatient rehabilitation services, and home health agencies, comprehensive outpatient rehabilitation facilities, and independent therapy providers furnish care at home or on an outpatient basis. Given the number and distribution of these other rehabilitation therapy providers, it is unlikely that areas exist where IRFs are the only provider of rehabilitation therapy services available to Medicare beneficiaries.

In 2016, about 77 percent of IRFs were distinct units in acute care hospitals; the remaining 23 percent were freestanding facilities. However, because hospital-based units have, on average, fewer beds and a lower share of Medicare discharges, they accounted for only 50 percent of Medicare discharges. Overall, 31 percent of IRFs were for-profit entities. Freestanding IRFs were far more likely to be for profit than were hospital-based IRFs (73 percent vs. 19 percent, respectively; data not shown). About 52 percent of Medicare discharges in 2016 were from for-profit facilities. Over time, the number of hospital-based and nonprofit IRFs has declined, while the number of freestanding and for-profit IRFs has increased. Between

**TABLE  
10-5**

**The number of IRF cases per FFS beneficiary increased in 2016**

	2004	2006	2008	2010	2013	2014	2015	2016	Average annual change		
									2004-2008	2008-2015	2015-2016
Number of cases	495,349	404,633	356,312	359,307	373,118	375,590	381,339	390,514	-7.9%	1.0%	2.4%
Cases per 10,000 FFS beneficiaries	135.6	111.9	100.4	99.7	99.1	99.3	101.0	101.7	-7.2	0.0	1.4
Payment per case	\$13,290	\$15,380	\$16,646	\$17,085	\$18,258	\$18,632	\$19,116	\$19,714	5.8	2.0	3.1
ALOS (in days)	12.7	13.0	13.3	13.1	12.9	12.8	12.7	12.7	1.3	-0.6	0.0
Users	449,362	369,269	323,897	325,506	337,704	338,887	343,562	350,353	-7.9	0.8	2.0

Note: IRF (inpatient rehabilitation facility), FFS (fee-for-service), ALOS (average length of stay).

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

2004 and 2016, the number of hospital-based IRFs fell by 9 percent and the number of nonprofit IRFs fell by 12 percent, while the number of freestanding IRFs and for-profit IRFs rose by 26 percent and 27 percent, respectively.

In 2016, 31 IRFs closed; most were hospital-based units. At the same time, 37 new IRFs opened. Slightly more than half of the new IRFs were hospital-based units. Of the hospital-based units, about a third were for profit. All but one of the new freestanding IRFs were for profit. Acute care hospitals may find that IRF units help reduce inpatient lengths of stay. Previous Commission analyses have found that hospitals with IRF units have higher inpatient margins than hospitals without such units (Medicare Payment Advisory Commission 2015).

In 2016, the average IRF occupancy rate remained at 65 percent. Occupancy rates were higher in freestanding IRFs (68 percent) than in hospital-based IRFs (62 percent). These rates suggest that capacity is more than adequate to meet demand for IRF services.

### IRF volume increased in 2016

The number of Medicare FFS IRF cases grew rapidly throughout the 1990s and the early years of the IRF PPS,

reaching a peak of about 495,000 in 2004. After CMS renewed its enforcement of the compliance threshold in 2004, IRF volume declined substantially, as expected, falling almost 8 percent per year from 2004 to 2008 (Table 10-5). At that point, volume began to increase slowly, rising an average of 1 percent per year from 2008 to 2015. Between 2015 and 2016, the number of FFS cases grew more quickly, rising 2.4 percent to almost 391,000 cases.

In 2016, the number of IRF cases per 10,000 FFS beneficiaries was almost 102, up 1.4 percent from the previous year. Relatively few Medicare beneficiaries use IRF services because, to qualify for Medicare coverage, IRF patients must be able to tolerate and benefit from rehabilitation therapy that is intensive, which is typically interpreted to mean at least three hours of therapy a day for at least five days a week. Still, compared with all Medicare beneficiaries, those admitted to IRFs in 2015 were disproportionately over age 85.

Despite the growth in the number of IRF cases per FFS beneficiary, the aggregate Medicare FFS discharge share in IRFs was stable at about 60 percent of total discharges.

## Measures of inpatient rehabilitation facility quality

In its assessment of the quality of care in inpatient rehabilitation facilities (IRFs), the Commission examines risk-adjusted rates of readmission to the hospital, discharge to the community and to skilled nursing facilities (SNFs), and change in functional status during the IRF stay.

Two readmission measures are calculated: one that occurs during the IRF stay and one that occurs within 30 days after discharge from the IRF (Kramer et al. 2015). Individuals who died in the IRF or during the 30 days after discharge from the IRF were excluded from the facilities' readmission rates. The readmission measures count patients whose primary diagnosis for rehospitalization was considered potentially avoidable; that is, the condition typically can be managed in the IRF. The potentially avoidable readmissions are respiratory-related illness (pneumonia, influenza, bronchitis, chronic obstructive pulmonary disease, and asthma); sepsis; congestive heart failure; fractures or fall with a major injury; urinary tract or kidney infection; blood pressure management; electrolyte imbalance; anticoagulant therapy complications; diabetes-related complications; cellulitis or wound infection; pressure ulcer; medication error or adverse drug reaction; and delirium. For the measure of potentially avoidable readmission during the IRF stay, delirium could be a primary or a secondary rehospitalization diagnosis.

To account for beneficiaries who are discharged from the IRF to a SNF, a measure of discharge to SNF is calculated. This measure reflects the share of stays in which the patient was discharged directly from the IRF for additional rehabilitation in a SNF that was financed under Medicare Part A's skilled nursing benefit.

Patients who were discharged from the IRF to a nursing home for a non-SNF episode are not considered discharged to a SNF.

The community discharge measure reflects the share of stays in which the patient was not discharged directly from the IRF to a hospital or a SNF. Individuals who were discharged from the IRF to a nursing home as a non-SNF resident (that is, for long-term care financed by payers other than Medicare) are included in the measure of community discharge. Patients who were discharged from the IRF to the community but were admitted to a hospital within one day of discharge are not considered discharged to the community.

The change in the Functional Independence Measure™ from admission to discharge is calculated for both motor function and cognition. The measures represent the average change among patients for 13 motor items and 5 cognitive items on the IRF–Patient Assessment Instrument. Patients with missing information for any of the items are not included when calculating average change.

The observed rates of readmission to the hospital, discharge to the community and to SNFs, and change in functional status during the IRF stay were risk adjusted for medical comorbidities, functional status at IRF admission, rehabilitation impairment category, and demographic characteristics. The data sources used for risk adjustment were Part A hospital and IRF claims. Risk-adjusted rates compare a facility's observed rates with its expected rates based on the mix of patients. The rates reported are the average risk-adjusted rates for Medicare fee-for-service beneficiaries in all IRFs with 25 or more stays during the year. ■

### Quality of care: Steady or improved for most measures

The Commission tracks three broad categories of IRF quality indicators: risk-adjusted facility-level change in functional and cognitive status during the IRF stay, rates

of discharge to the community and to SNFs, and rates of readmission to the acute care hospital (see text box on measures of quality). Most measures were steady or improved between 2011 and 2016.

**TABLE  
10-6****Risk-adjusted rates of discharge to the community and potentially avoidable rehospitalizations improved, 2011-2016**

Measure	2011	2012	2013	2014	2015	2016
Potentially avoidable rehospitalizations during IRF stay	2.8%	2.6%	2.5%	2.5%	2.4%	2.5%
Discharged to a SNF	6.9	6.7	6.7	6.9	6.8	6.7
Discharged to the community	74.1	75.3	75.9	76.2	76.0	76.9
Potentially avoidable rehospitalizations during 30 days after discharge from IRF	5.0	4.6	4.5	4.4	4.1	4.4

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility). High rates of discharge to the community indicate better quality. High rates of rehospitalization and discharge to SNF indicate worse quality. Rates are the average of facility rates and calculated for all facilities with 25 or more Medicare fee-for-service stays.

Source: Analysis of Inpatient Rehabilitation Facility–Patient Assessment Instruments from CMS.

### Risk-adjusted rates of potentially avoidable rehospitalization, discharge to the community, and discharge to SNF

Avoidable rehospitalizations expose beneficiaries to hospital-acquired infections, increase the number of transitions between settings (which are disruptive to patients), and can result in medical errors (such as medication errors). In addition, they unnecessarily increase Medicare spending. There has been relatively little research on rehospitalization of IRF patients in aggregate, though some studies have focused on one or more rehabilitation impairment categories (Dejong et al. 2009, Galloway et al. 2013, Ottenbacher et al. 2014, Schneider et al. 2013, Schneider et al. 2012). However, research regarding rehospitalization of SNF and nursing home patients has identified several contributing factors that may be within a post-acute care provider’s control. These factors include staffing level, skill mix, and frequency of staff turnover; drug management; and adherence to transitional care protocols such as discharge counseling, medication reconciliation, patient education regarding self-care, and communication among providers, staff, and the patient’s family (Grabowski et al. 2008, Kane et al. 2003, Konetzka et al. 2008a, Konetzka et al. 2008b, Lau et al. 2005, Mustard and Mayer 1997).

The Commission’s rates of rehospitalization during the IRF stay and during the 30 days after discharge are risk adjusted and reflect those readmissions that are potentially avoidable with adequate care in the IRF setting (Kramer et al. 2015).<sup>12</sup> The measure of readmission in the 30 days after discharge reflects how well facilities prepare

beneficiaries and their caregivers for safe and appropriate transitions to the home or the next health care setting. Since 2013, the national average for the rate of risk-adjusted potentially avoidable readmissions during the IRF stay has been about 2.5 percent (Table 10-6). (Lower rates are better.) Meanwhile, between 2011 and 2015, the rate of risk-adjusted potentially avoidable readmissions within 30 days after discharge from an IRF declined from 5.0 percent to 4.1 percent, then rose to 4.4 percent in 2016.

We also examined rates of discharge to the community and to SNFs. We found that between 2011 and 2016, the national average for the risk-adjusted community discharge rate increased from 74.1 percent to 76.9 percent.<sup>13</sup> (Higher rates are better.) The national average for the risk-adjusted rate of discharge to SNFs declined slightly to 6.7 percent.

### Risk-adjusted gains in motor function and cognition

To qualify for coverage of IRF care, beneficiaries must require, be able to participate in, and be able to benefit from intensive rehabilitation therapy. To observe the extent to which IRFs help improve the motor function and cognition of the beneficiaries they treat, we use a risk-adjusted measure of the gains in these areas. Our measures reflect the extent to which patients’ motor skills and cognition improved during the IRF stay, given their level of function at admission and how much improvement they would be expected to make. Some patients, such as a relatively healthy 68-year-old recovering from an elective hip replacement, are likely to improve across several

**TABLE  
10-7**

**Mean risk-adjusted functional outcomes improved, 2011-2016**

Measure	Risk-adjusted gain in function					
	2011	2012	2013	2014	2015	2016
Motor FIM™ gain	22.2	22.7	23.1	23.5	23.6	24.4
Cognitive FIM gain	3.6	3.7	3.9	3.9	3.9	4.0

Note: FIM™ (Functional Independence Measure™). The motor FIM measures the level of disability in motor functioning on a 91-point scale. The cognitive FIM measures the level of cognitive impairment on a 35-point scale. FIM gain is calculated as the FIM score at discharge minus the FIM score at admission. Higher FIM gain indicates more improvement. Mean FIM gain averages the change of all facilities with 25 or more Medicare fee-for-service stays.

Source: Analysis of Inpatient Rehabilitation Facility–Patient Assessment Instruments from CMS.

activities of daily living during their IRF stay. Other patients, such as an 85-year-old suffering from debility following a prolonged acute care hospital stay, may be expected to make only modest improvements during the IRF stay.

Functional status at admission and discharge is measured using the motor and cognitive scores on the IRF–PAI. This instrument incorporates the 18-item FIM scale to assess the level of disability in motor and cognitive functioning and the burden of care for a patient’s caregivers (Deutsch et al. 2005). Scores for each of the 18 FIM items can be summed to calculate a motor score (based on 13 FIM items) and a cognitive score (based on 5 FIM items). The motor score at discharge can range from 13 to 91, while the cognitive score can range from 5 to 35, with higher scores indicating greater functional independence. To measure observed improvement in motor function and cognition, we subtracted the respective FIM scores at admission from the FIM scores at discharge to calculate FIM motor and cognitive gains (Kramer et al. 2015). A larger number indicates more improvement in functional independence and cognition between admission and discharge. Each risk-adjusted rate was calculated by comparing a facility’s observed rate with its expected rate and multiplying this ratio by the national rate.

In 2016, the mean gain (positive change) in the motor FIM score during an IRF stay was 24.4, while the mean gain for the cognitive FIM score was 4.0 (Table 10-7). (Bigger gains are better.) The average risk-adjusted gain in IRF

patients’ motor and cognitive FIM scores (as assigned by IRFs) increased from 2011 to 2016. However, changes in motor function and cognition must be interpreted with caution. Functional status data are generally obtained by observation of the patient and are somewhat subjective. Because payment is based in part on patients’ functional status at admission—with higher payments associated with lower functional status—providers have a financial incentive to minimize their assessments of patients’ levels of function at admission. If IRFs minimize patients’ functional status at admission, gains in function during the patients’ stays will be overstated.

**Variation in quality measures across IRFs**

The measures we examined varied across providers (Table 10-8, p. 282). We found that the lowest performing quartile of IRFs had a risk-adjusted rate of discharge to a SNF that was 8.5 percent or higher in 2016, whereas the best performing quartile of providers had rates of 4.2 percent or less. (A lower rate of discharge to a SNF is better.) Risk-adjusted rates of discharge to the community varied as well: The worst performing quartile of IRFs had a community discharge rate of 73.9 percent or less, while the best performing quartile of providers had rates of 79.9 percent or more. (A higher rate of discharge to the community is better.) Variation was also seen in rehospitalization rates: The worst performing quartile had risk-adjusted rates of potentially avoidable readmissions during the IRF stay that were at or above 3.2 percent, whereas the best quartile had rates at or below 1.5 percent. (A lower rate of readmissions is better.)

**TABLE  
10-8**

**Performance on risk-adjusted quality measures varied across IRFs in 2016**

Measure	Risk-adjusted rate		
	Mean	Worst performing quartile	Best performing quartile
Motor FIM™ gain	24.4	21.7	27.0
Cognitive FIM gain	4.0	3.2	4.9
Potentially avoidable rehospitalizations during IRF stay	2.5%	3.2%	1.5%
Discharged to a SNF	6.7	8.5	4.2
Discharged to the community	76.9	73.9	79.9
Potentially avoidable rehospitalizations during 30 days after discharge from IRF	4.6	5.7	3.4

Note: IRF (inpatient rehabilitation facility), FIM™ (Functional Independence Measure™), SNF (skilled nursing facility). The motor FIM measures the level of disability in motor functioning on a 91-point scale. The cognitive FIM measures the level of cognitive impairment on a 35-point scale. FIM gain is calculated as the FIM score at discharge minus the FIM score at admission. Higher FIM gain indicates more improvement. High rates of discharge to the community indicate better quality. High rates of rehospitalization and discharge to SNF indicate worse quality. Mean rates are calculated for all facilities with 25 or more Medicare fee-for-service stays.

Source: Analysis of Inpatient Rehabilitation Facility–Patient Assessment Instruments from CMS.

### Providers’ access to capital: IRFs appear to have adequate access to capital

More than three-quarters of IRF providers are hospital-based units that would access any necessary capital through their parent institutions. Overall, as detailed in the hospital chapter, hospitals’ access to capital remained strong in 2016 and 2017 due in part to continuing low interest rates (Cain Brothers 2017). However, the three major bond-rating agencies (Fitch Ratings, Moody’s Investor Services, and Standard & Poor’s Ratings Services) reported that nonprofit hospitals in 2016 experienced slowing of revenue growth from the previous year, rising expense growth, and slightly lower facility-wide operating profits (Fitch Ratings 2017, Moody’s Investors Service 2017, Standard & Poor’s Ratings Services 2017). The three largest for-profit hospital systems reported a similar trend (Community Health Systems 2017, Morningstar Document Research 2017a, Morningstar Document Research 2017b). Expense growth picked up because of increases in the cost of nursing labor, information technology, and pharmaceutical and medical supplies—costs that affect IRFs as well as acute care hospitals.

Market analysts indicate that the IRF industry’s largest chain, HealthSouth—which owned almost half of all freestanding IRFs in 2016 and accounted for about a

quarter of all Medicare IRF discharges—has good access to capital. This assessment is reflected in the chain’s continued expansion. Analysts note that HealthSouth traditionally has prioritized building new facilities over acquisition of existing facilities, which allows the company to maintain control over facility size and amenities. In 2016, the company opened three new facilities and reported that it had at least four more facilities under construction (HealthSouth Corporation 2017). As part of a vertical integration strategy, the company is strengthening ties between its IRFs and home health agencies. (The chain acquired one of the nation’s largest providers of home health care in late 2014.) In addition, HealthSouth is increasingly entering into joint ventures with acute care hospitals to build new IRFs. This strategy is intended to position the company as a desirable partner for acute care hospitals operating under coordinated care delivery models and bundled payment arrangements, and it helps ensure a steady stream of referrals from acute care hospitals. To advance this strategy, HealthSouth is one of the few post-acute care companies that has invested heavily in electronic medical record technology. Analysts believe the company is well positioned to partner with acute care hospitals seeking post-acute care providers with provable outcomes and thus have rated HealthSouth stock a “buy.”

Most other freestanding IRFs are independent or local chains with a limited number of facilities. The extent to which these providers have access to capital is less clear.

### Medicare payments and providers' costs: Medicare margins remained high in 2016

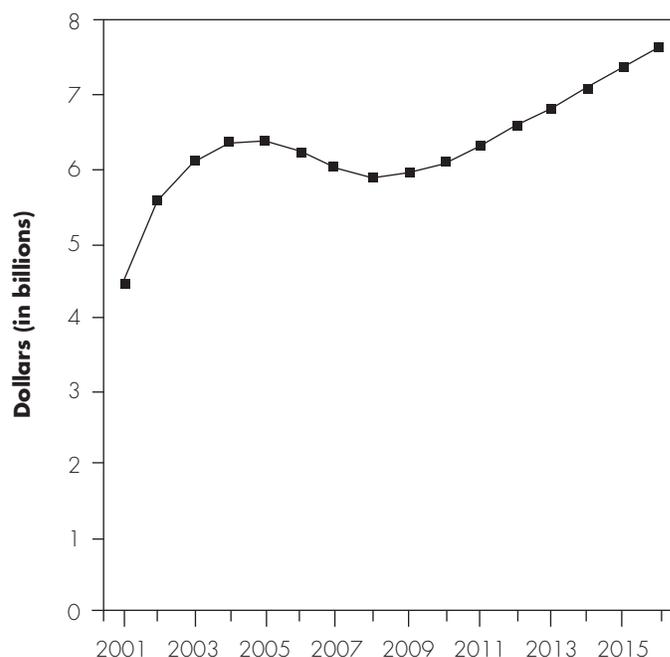
After a period of steady growth between 2009 and 2015, the aggregate IRF margin declined in 2016 but remained high at 13.0 percent. Medicare margins in freestanding IRFs declined by 1.2 percentage points in 2016 but, at 25.5, remained very high. Hospital-based IRF margins were comparatively low, but one-quarter of hospital-based IRFs had Medicare margins greater than 11 percent, indicating that many hospitals can manage their IRF units profitably. Lower margins in hospital-based IRFs were driven largely by higher unit costs. Several factors account for these higher costs. First, hospital-based IRFs are smaller than their freestanding counterparts and may achieve fewer economies of scale. Second, hospital-based IRFs appear to be less stringent in their cost control, perhaps because they are far less likely than freestanding IRFs to be for profit and therefore less likely to be focused on controlling costs to maximize returns to investors. In addition, Commission analysis suggests that hospital-based IRFs may provide a somewhat different mix of services, including more costly therapy modalities. Third, there are notable differences in hospital-based and freestanding IRFs' mix of cases. Some case types may be less profitable, resulting in higher margins for facilities that admit smaller shares of these cases. Finally, hospital-based IRFs may also differ in their assessment and scoring of patients' motor and cognitive function, which can result in payments that are not properly aligned with resource costs. Given the difference in financial performance across IRFs, we examined freestanding and hospital-based IRFs' marginal profit to assess whether both types of providers have a financial incentive to expand the number of Medicare beneficiaries they serve. We found that Medicare payments exceed marginal costs by a substantial amount—19.3 percent for hospital-based IRFs and 40.9 percent for freestanding IRFs—suggesting that IRFs with available beds have a strong incentive to admit Medicare patients. This finding is a very positive indicator of patient access, even in IRFs with lower margins.

### Trends in spending and cost growth

The Office of the Actuary estimates that Medicare FFS spending for IRF services in fiscal year 2016 was \$7.7 billion (Figure 10-1). Program spending has been growing,

**FIGURE 10-1**

**Program spending for IRF services has grown steadily since 2008**

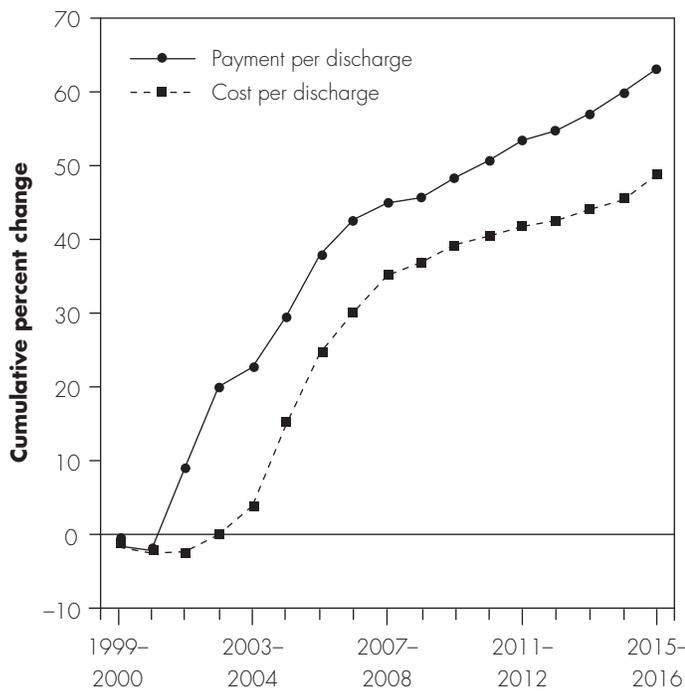


Note: IRF (inpatient rehabilitation facility).

Source: Office of the Actuary 2017.

on average, more than 3 percent per year since 2009, reversing a downward trend that began in 2004. Beginning that year, renewed enforcement of the compliance threshold and restrictions of some of the qualifying conditions resulted in a substantial reduction in the number of Medicare patients treated in IRFs. (This reduction was consistent with the underlying reason for the compliance threshold—to direct only the most clinically appropriate cases to this intensive, costly post-acute setting.) Between 2005 and 2008, program spending for IRF services fell 8 percent. The decline in volume slowed in 2008 and reversed in 2009, after the Congress permanently capped the compliance threshold at 60 percent. Medicare spending for IRF services began to grow again at that point.

As the IRF patient population shifted to patients with more severe conditions who counted toward the compliance threshold, case-mix severity increased, as did the average cost per discharge. Between 2004 and 2008, the cumulative growth in cost per discharge was

**FIGURE  
10-2****IRFs' payments per discharge increased cumulatively more than costs, 1999-2016**

Note: IRF (inpatient rehabilitation facility). Percent changes are calculated based on consistent two-year cohorts.

Source: MedPAC analysis of Medicare cost report data from CMS.

31.2 percent (Figure 10-2). Payments per discharge grew somewhat more slowly, due in part to reductions in the IRF standard payment conversion factor in 2006 and 2007. CMS applied these reductions after determining that some of the growth in IRFs' case mix did not reflect a real increase in IRF patients' acuity but, rather, was the result of documentation and coding changes.<sup>14</sup> As cost growth outpaced payment growth, the aggregate margin between 2003 and 2009 declined from 17.8 percent to 8.4 percent.

From 2009 to 2015, cost growth slowed considerably; over the period, the cumulative growth in cost per discharge was 8.5 percent. Cost growth was slower during this period for all types of IRFs but especially for freestanding for-profit IRFs: From 2009 to 2015, the cumulative growth in cost per discharge for freestanding for profits was 2.0 percent. The cumulative growth in payments per discharge grew more rapidly than costs, climbing 14.3 percent in aggregate and 15.1 percent for freestanding for profits.

Aggregate margins climbed from 8.4 percent in 2009 to 13.8 percent in 2015.

Between 2015 and 2016, cost growth outpaced payment growth for the first time since 2009. The aggregate cost per discharge increased 3.4 percent, while payments per discharge increased 3.2 percent.

**Margins vary widely**

Following a period of steady growth, the aggregate IRF margin declined in 2016 but remained high at 13.0 percent (Table 10-9). Financial performance varied across IRFs. Medicare margins in freestanding IRFs declined by 1.2 percentage points in 2016 but remained very high. In 2016, the aggregate margin for freestanding IRFs (which accounted for half of all Medicare discharges from IRFs) was 25.5 percent; hospital-based IRFs had an aggregate margin of 1.2 percent.<sup>15</sup> Margins varied by ownership as well, with for-profit IRFs having a higher aggregate Medicare margin in 2016 than nonprofit IRFs (23.9 percent vs. 2.0 percent, respectively). (Hospital-based IRFs are far more likely than freestanding IRFs to be nonprofit.) Among freestanding IRFs, nonprofit facilities (which accounted for 7 percent of Medicare discharges from IRFs) had an aggregate margin of 11.5 percent (data not shown). Freestanding for-profit IRFs (which accounted for 42 percent of Medicare discharges from IRFs) had an aggregate margin of 28.1 percent. Among hospital-based IRFs, the aggregate margin for nonprofit units (which accounted for 35 percent of Medicare discharges from IRFs) was 0.1 percent, while the margin for for-profit units (10 percent of Medicare discharges from IRFs) was 6.2 percent.

Higher unit costs were the primary driver of differences in financial performance between freestanding and hospital-based IRFs. Freestanding IRFs had a median standardized cost per discharge that was 28 percent lower than that of hospital-based IRFs (\$11,796 vs \$16,406, respectively) (Table 10-10, p. 286). Hospital-based IRFs are far more likely than freestanding IRFs to be nonprofit, which may contribute to the disparity in unit costs. But even nonprofit freestanding IRFs had a median standardized cost per discharge that was 17 percent lower than that of hospital-based IRFs (data not shown). Previous Commission analysis of underlying cost components found that hospital-based IRFs had higher costs than freestanding IRFs across all cost categories, with the biggest difference in routine costs (Medicare Payment Advisory Commission 2015).

**TABLE  
10-9**

**Aggregate IRF margins declined in 2016 but remained high**

Type of IRF	Share of Medicare discharges, 2016	Margins								
		2004	2006	2008	2010	2012	2013	2014	2015	2016
All IRFs	100%	16.7%	12.5%	9.4%	8.6%	11.2%	11.5%	12.4%	13.8%	13.0%
Hospital based	50	12.2	9.9	3.9	-0.5	0.7	-0.1	0.9	1.9	1.2
Freestanding	50	24.7	17.5	18.2	21.4	23.9	24.7	25.3	26.7	25.5
Nonprofit	41	12.8	11.0	5.3	2.1	2.1	1.1	2.0	3.5	2.0
For profit	52	24.4	16.3	16.9	19.6	22.9	23.4	23.8	24.8	23.9
Government	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Urban	93	17.0	12.8	9.6	9.0	11.6	11.9	12.8	14.2	13.2
Rural	7	13.2	10.0	6.9	4.7	6.5	6.0	6.2	8.3	9.5
Number of beds										
1 to 10	2	3.7	-3.6	-4.9	-10.3	-6.9	-11.2	-10.8	-7.1	-10.3
11 to 24	22	10.5	7.3	1.2	-3.3	-1.2	-0.8	-0.2	-0.4	0.3
25 to 64	48	18.3	13.7	10.1	10.6	12.3	13.2	14.2	15.8	14.6
65 or more	28	21.5	17.8	17.3	17.5	21.0	20.0	20.7	22.9	22.0
Medicare share										
<50%	22	12.9	11.1	5.1	0.3	1.5	0.6	1.2	2.9	2.0
50% to 75%	56	17.1	12.6	9.5	9.6	13.3	14.0	15.4	16.6	15.8
>75%	22	19.6	13.9	13.5	13.6	18.6	18.5	17.9	19.2	18.2

Note: IRF (inpatient rehabilitation facility), N/A (not applicable). Government-owned facilities operate in a different financial context from other facilities, so their margins are not necessarily comparable. Their margins are not presented separately here, although they are included in the margins for other groups (e.g., "all IRFs"), where applicable. Percentages may not sum to 100 due to rounding.

Source: MedPAC analysis of cost report data from CMS.

Nevertheless, one-quarter of hospital-based IRFs had Medicare margins greater than 11 percent, indicating that many hospitals can manage their IRF units profitably. Further, despite comparatively low average margins in hospital-based IRFs, evidence suggests that these units make a positive financial contribution to their parent hospitals. Commission analysis found that, in 2013, the aggregate Medicare margin for inpatient hospitals with IRF units was a percentage point higher than that of hospitals without IRF units (Medicare Payment Advisory Commission 2015).

Margins also varied by facility size. IRFs with 10 or fewer beds had an aggregate Medicare margin of -10.3 percent in 2016, compared with an aggregate Medicare margin of

22.0 percent in IRFs with 65 or more beds (Table 10-9). Medicare margins tended to rise as the Medicare share increased. The aggregate Medicare margin was 2.0 percent for IRFs in which fewer than half of all discharges were covered by Medicare FFS; for IRFs in which more than three-quarters of discharges were covered by Medicare FFS, the aggregate Medicare margin was 18.2 percent.

**Differences in standardized costs suggest economies of scale**

Adjusting IRF costs per discharge for differences in wages, case mix, high-cost outliers, and short-stay cases permits a standardized comparison of costs across types of IRFs nationwide.<sup>16</sup> The median standardized cost per

**TABLE  
10-10****IRFs with fewer beds had much higher standardized costs per discharge, 2016**

Type of IRF	Median standardized cost per discharge
All IRFs	\$15,494
Hospital based	16,406
Freestanding	11,796
Nonprofit	16,311
For profit	13,315
Government	17,813
Urban	15,185
Rural	17,914
Number of beds	
1 to 10	18,588
11 to 24	16,408
25 to 64	14,239
65 or more	12,103

Note: IRF (inpatient rehabilitation facility). Cost per discharge is standardized for differences in area wages, mix of cases, and prevalence of high-cost outliers, short-stay outliers, and transfer cases. Government-owned facilities operate in a different financial context from other facilities, so their costs are not necessarily comparable.

Source: MedPAC analysis of Medicare cost report and Medicare Provider Analysis and Review data from CMS.

discharge for all IRFs in 2016 was \$15,494 (Table 10-10). Costs were inversely related to the size of the IRF. IRFs with 10 or fewer beds had a median standardized cost per discharge that was 54 percent higher than that of IRFs with 65 or more beds (\$18,588 vs. \$12,103, respectively).

We stratified IRFs into quartiles of standardized costs to compare the characteristics of facilities with the lowest and highest costs in 2016 (Table 10-11). IRFs in the lowest cost quartile had a median standardized cost per discharge that was 42 percent less than that of IRFs in the highest cost quartile (\$11,490 vs. \$19,873, respectively). The difference in Medicare margins between low-cost and high-cost IRFs was very large. IRFs in the lowest cost quartile had a median Medicare margin of 28.4 percent compared with -22.1 percent for IRFs in the highest cost quartile.

IRFs with the lowest costs tended to be larger: The median number of beds was 48 compared with 18 in the

highest cost quartile (Table 10-11). IRFs with the lowest costs also had a higher median occupancy rate than IRFs in the highest cost quartile (72 percent vs. 53 percent, respectively). These results suggest that low-cost IRFs benefit from economies of scale. Low-cost facilities were disproportionately freestanding and for profit. Still, 38 percent of the IRFs in the lowest cost quartile were hospital based, and 31 percent of the IRFs in this group were nonprofit. By contrast, in the highest cost quartile, 94 percent were hospital based and 62 percent were nonprofit.

**Numerous factors contribute to higher costs in hospital-based IRFs**

Several factors account for the disparity in margins between hospital-based and freestanding IRFs, including differences in economies of scale, stringency of cost control, service mix, and patient mix. Differences in IRFs' assessment of patients' motor function and cognition likely play a role as well.

**Hospital-based IRFs may have fewer economies of scale**

Because they are typically small and have relatively few cases, hospital-based IRFs likely achieve fewer economies of scale than their freestanding counterparts. In 2016, 66 percent of hospital-based IRFs had fewer than 25 beds, compared with 7 percent of freestanding IRFs. Only 3 percent of hospital-based IRFs had 65 or more beds, compared with 34 percent of freestanding IRFs. Further, occupancy rates were lower in hospital-based IRFs than in their freestanding counterparts (62 percent vs. 68 percent, respectively). As a result, hospital-based IRFs had, on average, about 415 cases (all payers) in 2016 compared with 1,139, on average, for freestanding IRFs.

**Hospital-based IRFs may be less stringent in cost control**

Hospital-based IRFs appear to be less stringent in their cost control. Commission analysis of IRF cost growth for consistent two-year cohorts found that the cumulative increase between 2009 and 2016 in costs per case for hospital-based IRFs was 17.9 percent compared with 7.4 percent growth in costs per case for freestanding IRFs. Notably, hospital-based IRFs are far less likely than freestanding IRFs to be for profit and therefore are likely to be less focused on controlling costs to maximize returns to investors. We see this effect even among freestanding IRFs, where the cumulative increase in costs per case for nonprofits has far outstripped that of for-profit facilities. From 2009 to 2016, costs per case in nonprofit freestanding IRFs grew 23 percent, compared

with 5 percent growth in costs per case in for-profit freestanding IRFs.

The Commission’s long-standing position has been that providers’ costs are not entirely immutable and that many costs are indeed within providers’ ability to control. Providers can control costs by eliminating low-value services and providing a more efficient mix of services, while maintaining quality of care. Less desirably, providers can also control their costs by stinting on care. Commission analysis suggests that hospital-based IRFs may provide a somewhat different mix of services than do freestanding providers, including more costly therapy modalities. It is not clear whether use of more costly therapy modalities is necessary to care for the population hospital-based IRFs admit (and thus is clinically appropriate), or whether it represents provider inefficiency, and is thus within providers’ ability to control.

**Hospital-based IRFs have a different mix of patients**

There are marked differences in hospital-based and freestanding IRFs’ mix of cases. A larger share of hospital-based IRFs’ patients than those of freestanding IRFs were admitted with stroke as the primary reason for rehabilitation (24 percent vs. 17 percent, respectively). Freestanding IRFs compared with hospital-based IRFs admitted larger shares of cases with other neurological conditions (18 percent vs. 10 percent, respectively) and other orthopedic conditions (10 percent vs. 6 percent, respectively). Notably, the impairment groups of other neurological conditions and other orthopedic conditions encompass a broader range of conditions than do many of the other impairment groups. This clinical heterogeneity can allow favorable selection of patients within these groups based on their likely costs of care. Cases with other neurological conditions also count toward the compliance threshold, so IRFs with higher shares of these cases may be able to more easily meet the requirements of the 60 percent rule while keeping down costs. Further, some case types may be more profitable than others, resulting in higher margins for facilities that admit larger shares of those cases. The Commission plans to examine the relative profitability of the IRF case-mix groups in a future analysis.

In general, hospital-based IRFs also have a much larger share of cases with extraordinarily high costs. In 2016, 13 percent of hospital-based IRF cases qualified for high-cost outlier payments, compared with just 3 percent of freestanding IRF cases. Indeed, 83 percent of Medicare’s IRF outlier payments were made to hospital-based

**TABLE 10-11**

**Low standardized costs led to high margins for both hospital-based and freestanding IRFs in 2016**

Characteristic	Quartile	
	Lowest cost	Highest cost
Median cost per discharge		
All	\$11,490	\$19,873
Hospital based	12,158	19,860
Freestanding	10,854	20,417
Median Medicare margin		
All	28.4%	-22.1%
Hospital based	23.4	-22.1
Freestanding	31.0	-23.1
Median		
Number of beds	48	18
Occupancy rate	72%	53%
Share of facilities that are:		
Hospital based	38%	94%
Freestanding	62	6
Nonprofit	31	62
For profit	66	20
Government	3	17
Urban	94	80
Rural	6	20

Note: IRF (inpatient rehabilitation facility). Cost per discharge is standardized for differences in area wages, mix of cases, and prevalence of high-cost outliers, short-stay outliers, and transfer cases. Government-owned facilities operate in a different financial context from other facilities, so their costs are not necessarily comparable.

Source: MedPAC analysis of Medicare cost report and Medicare Provider Analysis and Review data from CMS.

facilities. Though these payments diminish per case losses, they do not completely cover per case costs. It is not clear whether the large number of outlier cases in hospital-based IRFs stems from differences in efficiency, unmeasured case complexity, or both.

**Hospital-based IRFs may assess their patients differently**

As noted earlier, evidence suggests that assessments of patients’ motor and cognitive function are not reliably consistent across IRFs. Some in the industry have postulated that hospital-based IRFs devote less time to

training assessment staff and verifying the accuracy of assessments, resulting in less reliable measures of patients' motor and cognitive function in hospital-based IRFs. Others assert that some freestanding IRFs are aggressively assessing their patients so as to maximize payment. The integrity of Medicare's payment system for IRFs is contingent on FIM inter-rater reliability; that is, the payment system assumes that similar patients will be given similar function scores. If IRFs assess similar patients differently, payments will not be properly aligned with resource costs. Some IRFs could receive payments that are too low relative to the costs incurred in treating patients, while other IRFs could receive payments that are too high. To the extent that hospital-based IRFs consistently assess their patients as less disabled than do their freestanding counterparts, for whatever reason, their payments—and margins—will be systematically lower.

**Marginal profit: A measure of the financial attractiveness of Medicare patients**

Given the difference in financial performance across IRFs, the Commission considers whether providers have any financial incentive to expand the number of Medicare beneficiaries they serve. In deciding whether to treat a patient, a provider with excess capacity compares the marginal revenue it will receive (i.e., the Medicare payment) with its marginal costs—that is, the costs that vary with volume. If Medicare payments are larger than the marginal costs of treating an additional beneficiary, a provider has a financial incentive to increase its volume of Medicare patients. In contrast, if payments do not cover the marginal costs, the provider may have a disincentive to care for Medicare beneficiaries. If we approximate marginal cost as total Medicare cost minus fixed building and equipment cost, then:

$$\text{Marginal profit} = (\text{payments for Medicare services} - (\text{total Medicare costs} - \text{fixed building and equipment costs})) / \text{Medicare payments}$$

The result is a lower bound on the marginal profit because we ignore any potential labor costs that are fixed. For IRFs with available data, we find that Medicare payments exceed marginal costs by a substantial amount—19.3 percent for hospital-based IRFs and 40.9 percent for freestanding IRFs—suggesting that IRFs with available beds have an incentive to admit Medicare patients. This finding is a very positive indicator of patient access, even in IRFs with lower margins.

**How should Medicare payments change in 2019?**

To estimate 2018 payments, costs, and margins with 2016 data, the Commission considers policy changes effective in 2017 and 2018, including those in the Patient Protection and Affordable Care Act of 2010 (PPACA) and the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). Those changes that affect our estimate of the 2018 margin include:

- a market basket increase of 2.7 percent for fiscal year 2017, offset by PPACA-required reductions totaling 1.05 percentage points, for a net update of 1.65 percent;
- an update of 1.0 percent for fiscal year 2018, as required by MACRA;<sup>17</sup> and
- changes to the high-cost outlier fixed loss amount in 2017, which will increase payments.

Historically, cost growth in this sector has been at or below market basket levels, though between 2015 and 2016, cost growth exceeded the market basket. We use a three-year historical average to estimate cost growth in 2017 and 2018.

Considering these assumptions, we project an aggregate Medicare margin of 11.9 percent for IRFs in 2018.

For fiscal years 2009 through 2017, the Commission recommended a 0 percent update to the IRF payment rate. In its calculations for fiscal year 2018, however, as the aggregate margin neared historic highs, the Commission recommended in March 2017 that the Congress reduce the 2018 IRF payment rate by 5 percent. Since such action was not taken and since, in the absence of legislative action, CMS is required by statute to apply an adjusted market basket increase, payments have continued to rise: From 2009 to 2015, the cumulative growth in payments per discharge was 14.3 percent. At the same time, growth in costs has been low. From 2009 to 2015, the cumulative growth in cost per discharge was 8.5 percent, well below market basket levels. The gap between payments and cost per case for freestanding IRFs has grown even wider: From 2009 to 2015, the cumulative increase in payments per case for freestanding IRFs was 14.6 percent, compared with 4.2 percent growth in costs per case. In 2015, margins for freestanding IRFs reached an all-time high of 26.7

percent. Freestanding nonprofit IRFs had a margin of 13.9 percent that year, while freestanding for-profit facilities had a margin of 29.2 percent. In 2016, the gap between payments and costs narrowed somewhat as per case cost growth (3.4 percent in aggregate) exceeded payment growth (3.2 percent in aggregate) for the first time since 2008. As a result, the aggregate margin in 2016 declined but remained high at 13.0 percent. This high aggregate margin indicates that aggregate Medicare payments continue to substantially exceed the costs of caring for beneficiaries. Absent congressional action, payments to IRFs will continue to increase in fiscal year 2019.

Reducing the payment rate for IRFs would better align Medicare payments with the costs of IRF care. A reduction in the payment rate is made in the context of the Commission's recommendation that the Congress adjust the IRF payment rate using a blend of the current IRF PPS relative weights and the unified PAC PPS relative weights described in Chapter 7. A blend of the relative weights would not affect the level of payments to IRFs but would redistribute payments across case types by increasing payments for medically complex patients and lowering payments to patients with less complex medical conditions. Based on their mix of patients, the blend would have the effect of raising payments to nonprofit and hospital-based IRFs and lowering payments to for-profit and freestanding IRFs. The redistribution across providers enables the Commission to recommend, and policymakers to implement, a level of payments that would better align with the cost of care.

At the same time, the IRF high-cost outlier pool should be expanded, as previously recommended by the Commission, to further redistribute payments within the IRF PPS and reduce the impact of potential misalignments between IRF payments and costs. Currently, the outlier pool is set at 3 percent of total IRF payments. Expanding the outlier pool would increase outlier payments for the most costly cases, ameliorating the financial burden for IRFs that have a relatively high share of these cases. The expanded outlier pool would be funded by an offset to the national base payment amount, which would further reduce all CMG payment rates by the same percentage across the board. As noted in our March 2016 and March 2017 reports to the Congress, expanding the outlier pool could increase payments for providers who are less efficient as well as for providers whose patients' acuity is not well captured by the case-mix system. Nevertheless, because of concerns about the accuracy of Medicare's

payments for resource-intensive cases, the Commission continues to believe that an expanded outlier pool is warranted in the near term. Over the longer term, however, CMS must ensure the accuracy of Medicare's payments by determining that IRFs' assessment and scoring consistently reflects patients' level of disability. Research is also needed to assess variation in costs within the IRF CMGs and differences in relative profitability across CMGs. In the future, CMS could enact payment system reforms that necessitate reassessment of IRF outlier payments and adjustments to the outlier pool, including a return to a smaller pool.

The Commission also reiterates its March 2016 recommendation that the Secretary conduct focused medical record review of IRFs that have unusual patterns of case mix and coding. Further, the Secretary should reassess the inter-rater reliability of the IRF-PAI and conduct other research necessary to improve the accuracy of payments and protect program integrity.

The Commission estimates that reducing the payment rate for IRFs by 5 percent and expanding the outlier pool from 3 percent to 5 percent would decrease total payments to IRFs by 5 percent. Using payment weights that blended the IRF CMG weights with the unified PAC PPS relative weights would be budget neutral and so would have no effect on total payments to IRFs. We estimate the combined effect of reducing the payment rate for IRFs by 5 percent, expanding the outlier pool, and implementing blended relative weights would decrease aggregate payments to freestanding IRFs by 7.3 percent; to hospital-based IRFs by 2.8 percent; to for-profit IRFs by 6.9 percent; and to nonprofit IRFs by 3.4 percent.

## RECOMMENDATION 10

**The Congress should reduce the fiscal year 2019 Medicare payment rate for inpatient rehabilitation facilities by 5 percent.**

## RATIONALE 10

The combination of low historical cost growth and increasing average payments has resulted in overpayments to IRFs. The high aggregate margin in 2016 and our projected margin for 2018 indicate that Medicare payments substantially exceed the costs of caring for beneficiaries. This excess contributes to Medicare's long-run sustainability challenges. For every fiscal year since 2009, the Commission has recommended that the

update to the IRF payment rate be eliminated or that the payment rate be reduced by 5 percent. However, CMS has been required by statute to apply an adjusted market basket increase each year. Between 2009 and 2016, the cumulative increase in payments per case for all IRFs was 17.5 percent, while costs per case rose 11.9 percent, a difference of more than 5 percentage points. Reducing the payment rate for IRFs by 5 percent would better align Medicare payments with the costs of IRF care.

## IMPLICATIONS 10

### Spending

- The payment update for IRFs in fiscal year 2019 consists of a forecasted 2.8 percent market basket update, a forecasted -0.6 percent productivity adjustment of the market basket update, and a -0.75 percent market basket reduction required by PPACA.<sup>18</sup> Relative to current law, this recommendation would decrease Medicare spending by between \$250 million

and \$750 million in 2019 and by between \$1 billion and \$5 billion over five years.

### Beneficiary and provider

- We do not expect this combination of recommendations to have an adverse effect on Medicare beneficiaries' access to care or out-of-pocket spending. Indeed, to the extent that expanding the outlier pool and blending IRF PPS relative weights with weights developed for a unified PAC PPS shifts payments to more medically complex patients, access for some beneficiaries may improve. This recommendation could increase the financial pressure on some providers, but the effect would be ameliorated by blending IRF PPS relative weights with unified PAC PPS relative weights and expanding the high-cost outlier pool. We expect relatively efficient providers will continue to be willing and able to care for Medicare beneficiaries. ■

## Endnotes

---

- 1 More frequently, Medicare beneficiaries receive inpatient rehabilitation services in skilled nursing facilities (SNFs), in part because nationwide there are many more SNFs than IRFs.
- 2 More information about the prospective payment system for IRFs is available at [http://medpac.gov/docs/default-source/payment-basics/medpac\\_payment\\_basics\\_17\\_irf\\_final93a311adfa9c665e80adff00009edf9c.pdf?sfvrsn=0](http://medpac.gov/docs/default-source/payment-basics/medpac_payment_basics_17_irf_final93a311adfa9c665e80adff00009edf9c.pdf?sfvrsn=0).
- 3 Patients with a length of stay of fewer than four days are assigned to a single CMG, regardless of diagnosis, age, level of motor or cognitive function, or presence of comorbidities.
- 4 The 13 conditions are stroke; spinal cord injury; congenital deformity; amputation of a lower limb; major multiple trauma; hip fracture; brain injury; certain other neurological conditions (multiple sclerosis, Parkinson's disease, cerebral palsy, and neuromuscular disorders); burns; three arthritis conditions for which appropriate, aggressive, and sustained outpatient therapy has failed; and hip or knee replacement when it is bilateral, the patient's body mass index is greater than or equal to 50, or the patient is age 85 or older.
- 5 CMS's major revisions to the compliance threshold policy in 2004 were to (1) increase the number of conditions that count toward the threshold from 10 to 13 and (2) revise the qualifying conditions of major joint replacement—a condition that was commonly treated in IRFs at that time—such that only a specific subset of patients with that condition would count toward the compliance threshold.
- 6 Other orthopedic conditions, cardiac conditions, and debility are not among the 13 conditions that count toward the compliance threshold, but such cases may count if they have specified comorbidities.
- 7 Compliance is determined annually at the beginning of each facility's cost reporting period. Compliance is evaluated by Medicare's administrative contractors either through a review of a random sample of medical records or, more commonly, through the less resource-intensive "presumptive" method, which uses a computer program to compare a facility's assessments for all Medicare patients for the year with a list of eligible International Classification of Diseases diagnosis codes. The diagnosis codes included on the presumptive list are ones that CMS believes demonstrate either that the patient has one of the conditions that count toward compliance or that the patient has a comorbidity that could cause significant decline in function such that the patient would require intensive rehabilitation. Examples of the diagnosis codes that CMS removed in 2016 include nonspecific or miscellaneous diagnosis codes and codes for arthritis conditions that would meet the compliance criteria only if severity and prior treatment criteria are met, which can be determined only through medical record review.
- 8 This analysis of fee-for-service IRF claims and assessment data from 2013 excluded cases that did not have an acute care hospital discharge within 30 days before the IRF admission.
- 9 For this analysis, the Commission matched fee-for-service IRF claims and assessment data from 2013 with claims for IRF patients' preceding acute care hospital services. About 87 percent of IRF claims from 2013 could be linked to an acute care hospital discharge within 30 days before the IRF admission date. The vast majority of these post-acute IRF cases (96 percent) had an acute care hospital discharge within three days of the IRF admission. IRF cases that did not have an acute care hospital discharge within 30 days before the IRF admission were excluded from the analysis.
- 10 IRFs assign each patient to an impairment group that indicates the primary reason for inpatient rehabilitation. These impairment groups can be collapsed into 21 rehabilitation impairment categories (e.g., stroke, traumatic brain injury, and other neurological conditions). We looked at IRF patient characteristics both by impairment group and by the collapsed rehabilitation impairment categories.
- 11 For each impairment group, we examined patients' average case-mix index in the acute care hospital (a measure of resource intensity in the hospital) as well as the average severity of illness using the all-patient refined–diagnosis related groups. We also looked at the average length of stay in the hospital, the average length of stay in an intensive care or coronary care unit, and whether patients had been high-cost outliers in the hospital.
- 12 The potentially avoidable readmissions we measure are respiratory-related illness (pneumonia, influenza, bronchitis, chronic obstructive pulmonary disease, and asthma); sepsis; congestive heart failure; fractures or fall with a major injury; urinary tract or kidney infection; blood pressure management; electrolyte imbalance; anticoagulant therapy complications; diabetes-related complications; cellulitis or wound infection; pressure ulcer; medication error or adverse drug reaction; and delirium.
- 13 Our measure of community discharge does not give IRFs credit for discharging a Medicare beneficiary to the community if the beneficiary is subsequently readmitted to an acute care hospital within 30 days of the IRF discharge.

- 14 CMS reduced the IRF standard payment conversion factor by 1.9 percent in 2006 and 2.6 percent in 2007.
- 15 In 2016, for freestanding IRFs, the total (all-payer) margin—that is, the margin across all lines of business—was 9.4 percent, down 1.2 percentage points from the previous year. Due to data limitations, the total margin for hospital-based IRFs was not available.
- 16 In comparing costs across providers, the Commission standardizes costs using provider case mix. In IRFs, case mix is based in part on the functional status of patients. If assessment of patients' functional status is not reasonably consistent across providers, then differences in case mix may not reflect real differences in patient acuity. To the extent that this inconsistency occurs, facilities with an average case mix that is higher than warranted will have lower standardized costs than they otherwise would.
- 17 The market basket increase for fiscal year 2018 was 2.6 percent. That update would have been offset by PPACA-required reductions totaling 1.35 percentage points, for a net update of 1.25 percent. However, section 411(b) of MACRA required that the increase factor for fiscal year 2018 be 1.0 percent.
- 18 This market basket forecast was made in the third quarter of 2017. When setting the update for fiscal year 2019, CMS will use the most recent forecast available at that time, which may differ from the number we report here.

## References

---

- Cain Brothers. 2017. *Industry Insights*. October 30.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2014. Medicare program; inpatient rehabilitation facility prospective payment system for federal fiscal year 2015. Final rule. *Federal Register* 79, no. 151 (August 6): 45872–45936.
- Community Health Systems. 2017. Form 10–K annual report to the Securities and Exchange Commission. February 26.
- Dejong, G., S. D. Horn, R. J. Smout, et al. 2009. Joint replacement rehabilitation outcomes on discharge from skilled nursing facilities and inpatient rehabilitation facilities. *Archives of Physical Medicine and Rehabilitation* 90, no. 8 (August): 1284–1296.
- Deutsch, A., C. V. Granger, R. C. Fiedler, et al. 2005. Outcomes and reimbursement of inpatient rehabilitation facilities and subacute rehabilitation programs for Medicare beneficiaries with hip fracture. *Medical Care* 43, no. 9 (September): 892–901.
- Fitch Ratings. 2017. 2017 median ratios for not for profit hospitals and healthcare systems. September 20.
- Galloway, R. V., C. V. Granger, A. M. Karmarkar, et al. 2013. The Uniform Data System for Medical Rehabilitation: Report of patients with debility discharged from inpatient rehabilitation programs in 2000–2010. *American Journal of Physical Medicine & Rehabilitation* 92, no. 1 (January): 14–27.
- Grabowski, D. C., K. A. Stewart, S. M. Broderick, et al. 2008. Predictors of nursing home hospitalization: A review of the literature. *Medical Care Research and Review* 65, no. 1 (February): 3–39.
- HealthSouth Corporation. 2017. Annual report (Form 10–K) for fiscal year ending December 31, 2016. Filing submitted to the Securities and Exchange Commission. February 22.
- Kane, R. L., G. Keckhafer, S. Flood, et al. 2003. The effect of Evercare on hospital use. *Journal of the American Geriatrics Society* 51, no. 10 (October): 1427–1434.
- Konetzka, R. T., W. Spector, and M. R. Limcangco. 2008a. Reducing hospitalizations from long-term care settings. *Medical Care Research and Review* 65, no. 1 (February): 40–66.
- Konetzka, R. T., S. C. Stearns, and J. Park. 2008b. The staffing-outcomes relationship in nursing homes. *Health Services Research* 43, no. 3 (June): 1025–1042.
- Kramer, A., M. Lin, R. Fish, et al. 2015. *Development of inpatient rehabilitation facility quality measures: Potentially avoidable readmissions, community discharge, and functional improvement*. Report prepared for the Medicare Payment Advisory Commission. Washington, DC: MedPAC.
- Lau, D. T., J. D. Kasper, D. E. Potter, et al. 2005. Hospitalization and death associated with potentially inappropriate medication prescriptions among elderly nursing home residents. *Archives of Internal Medicine* 165, no. 1 (January 10): 68–74.
- Medicare Payment Advisory Commission. 2017. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2016. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2015. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Moody’s Investors Service. 2017. Non-profit and public healthcare medians: Key financial metrics underperform as pressures mount. August 21.
- Morningstar Document Research. 2017a. HCA Holdings, for 10–K. February 22.
- Morningstar Document Research. 2017b. Tenet Healthcare Corporation, for 10–K. February 27.
- Mustard, C. A., and T. Mayer. 1997. Case-control study of exposure to medication and the risk of injurious falls requiring hospitalization among nursing home residents. *American Journal of Epidemiology* 145, no. 8 (April 15): 738–745.
- Office of the Actuary, Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2017. Personal communication of author with Theresa Bean, November 1.
- Ottenbacher, K. J., A. Karmarkar, J. E. Graham, et al. 2014. Thirty-day hospital readmission following discharge from postacute rehabilitation in fee-for-service Medicare patients. *Journal of the American Medical Association* 311, no. 6 (February 12): 604–614.
- Schneider, J. C., P. Gerrard, R. Goldstein, et al. 2013. The impact of comorbidities and complications on burn injury inpatient rehabilitation outcomes. *Physical Medicine and Rehabilitation* 5, no. 2 (February): 114–121.

Schneider, J. C., P. Gerrard, R. Goldstein, et al. 2012. Predictors of transfer from rehabilitation to acute care in burn injuries. *Journal of Trauma and Acute Care Surgery* 73, no. 6 (December): 1596–1601.

Standard & Poor's Ratings Services. 2017. U.S. not-for-profit acute health care ratios: Operating performance weakens while balance sheets are stable. August 24.