

CHAPTER

10

**Inpatient rehabilitation
facility services**

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

- 10** For 2020, the Congress should reduce the fiscal year 2019 Medicare base payment rate for inpatient rehabilitation facilities by 5 percent.

COMMISSIONER VOTES: YES 17 • NO 0 • NOT VOTING 0 • ABSENT 0

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(Additionally, the Commission reiterates its March 2016 recommendations on the inpatient rehabilitation facility prospective payment system. See text box, p. 261.)

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 occupational therapy, rehabilitation nursing, speech–language pathology, and prosthetic and orthotic services. In 2017, Medicare spent \$7.9 billion on IRF care provided to fee-for-service (FFS) beneficiaries in about 1,180 IRFs nationwide. About 340,000 beneficiaries had around 380,000 IRF stays. On average, the Medicare FFS program accounted for 58 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 and of IRFs’ marginal profit under Medicare’s IRF prospective payment system suggest that access remains adequate.

- **Capacity and supply of providers**—After declining for several years, the number of IRFs increased in 2014 and continued to grow through 2016, reaching 1,188 facilities nationwide. In 2017, however, the number of IRFs declined slightly, to 1,178 facilities. Over time, the number of hospital-based and nonprofit IRFs has declined, while the number

In this chapter

- Are Medicare payments adequate in 2019?
- How should Medicare payments change in 2020?

of freestanding and for-profit IRFs has increased. In 2017, the average IRF occupancy rate remained at 65 percent, indicating that capacity is more than adequate to meet demand for IRF services.

- **Volume of services**—From 2016 to 2017, the number of Medicare FFS cases declined 2.7 percent, falling to about 380,000 cases after having experienced small annual growth every year since 2010.
- **Marginal profit**—The marginal profit, an indicator of whether IRFs with excess capacity have an incentive to treat more Medicare beneficiaries, was 19.4 percent for hospital-based IRFs and 38.8 percent for freestanding IRFs—a very positive indicator of patient access.

Quality of care—The Commission tracks three broad categories of IRF quality indicators: risk-adjusted facility-level change in patients' 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 2012 and 2017.

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 freestanding IRFs in 2017 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. IRFs' access to capital in large part depends on their total (all-payer) profitability, and in 2017, total margins for freestanding IRFs were 10.4 percent. Data on all-payer profitability are not available for hospital-based units, but we can examine the all-payer margins of hospitals with IRF units, which, in 2017, had an aggregate all-payer margin across all lines of business of 7.0 percent.

Medicare payments and providers' costs—The aggregate Medicare margin for IRFs has grown steadily since 2009. In the three-year period between 2015 and 2017, the aggregate IRF Medicare margin remained above 13 percent and in 2017 stood at 13.8 percent. Also in 2017, Medicare margins in freestanding IRFs were 25.5 percent, down slightly from their peak in 2015 of 26.7 percent. In 2017, hospital-based IRF margins were comparatively low at 1.5 percent, 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. In addition, there are notable differences in hospital-based and freestanding IRFs' mix of cases, which may indicate differences in profitability across case types. 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.

Growth in IRFs' costs historically has been low. From 2009 to 2015, the cumulative growth in cost per discharge was 8.4 percent, well below the 13.5 percent increase in the market basket for IRFs over the period. In 2016, per case cost growth (3.6 percent in aggregate) exceeded payment growth (2.9 percent in aggregate) for the first time since 2008. In 2017, however, per case payments again grew faster than costs (3.4 percent compared with 2.8 percent), resulting in an aggregate IRF margin of 13.8 percent. In 2018 to 2019, we anticipate costs in IRFs will grow faster than payments since updates in those years were constrained to 1.0 percent and 1.35 percent, respectively. For 2019, we project an aggregate Medicare margin of 11.6 percent.

This year, the Commission for the first time examined the financial performance of relatively efficient IRFs. Our analysis found that relatively efficient IRFs performed better on quality metrics and had costs 18 percent lower than other IRFs. Relatively efficient IRFs were on average larger and had higher occupancy rates, contributing to greater economies of scale and lower costs. Freestanding and for-profit facilities were more likely to be in the relatively efficient group.

On the basis of these factors, the Commission recommends a 5 percent reduction to the IRF payment rate for fiscal year 2020. In addition, the Commission reiterates its March 2016 recommendations that (1) 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 (2) the Secretary conduct focused medical record review of IRFs that have unusual patterns of case mix and coding and conduct other research necessary 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).¹ IRFs 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 2017, Medicare spent \$7.9 billion on IRF care provided in about 1,180 IRFs nationwide. About 340,000 beneficiaries had almost 380,000 IRF stays. On average, Medicare fee-for-service (FFS) beneficiaries accounted for about 58 percent of IRF discharges.

Since January 2002, Medicare has paid IRFs under a per discharge prospective payment system (PPS).² 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 certain comorbidities that have been found to increase the cost of care. Each CMG tier has a designated weight that reflects the group's average relative costliness of cases compared with that of the average Medicare IRF case.³ 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 also has outlier payments for patients who are extraordinarily costly. Starting in fiscal year 2020, CMS is changing the patient assessment instrument used to help classify patients for payment, shifting from IRF-specific measures of motor and cognitive function to measures that are standardized across post-acute care (PAC) settings. The changes to the assessment instruments will necessitate minor adjustments of the CMG definitions (see text box, pp. 256–257).

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, 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 patients admitted to an IRF have as a primary diagnosis or comorbidity at least 1 of 13 conditions specified by CMS.⁴ The intent of the compliance threshold is to distinguish IRFs from acute care hospitals. If an IRF does not meet the compliance threshold, 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.⁵ For an IRF claim to be considered reasonable and necessary, the patient must be reasonably expected to meet the following requirements at admission:

Changes to the IRF assessment instrument and case-mix groups in fiscal year 2020

Under the inpatient rehabilitation facility (IRF) prospective payment system (PPS), for purposes of payment, patients are assigned to rehabilitation impairment categories (RICs) based on the principal diagnosis or primary reason for inpatient rehabilitation. Within each RIC, patients are sorted into case-mix groups (CMGs) based on the patient's level of motor and cognitive function at admission and then further categorized into one of four tiers based on the presence of specific comorbidities that have been found to increase the cost of care.

To determine the appropriate CMG, IRFs assess and score each patient's motor and cognitive function using the IRF–Patient Assessment Instrument (IRF–PAI). The IRF–PAI is based on a modified version of the Uniform Data System for Medical Rehabilitation patient assessment instrument, commonly referred to as the Functional Independence Measure™, or FIM™. The IRF–PAI's 18 FIM data elements and associated modifiers, along with the FIM measurement scale, are used to measure a patient's level of disability and the burden of care for a patient's caregivers. (All else equal, a greater level of disability generally results in a higher payment.)

The IRF–PAI also includes items that are standardized across post-acute care (PAC) settings and are used to collect information on a patient's motor and cognitive function for the IRF Quality Reporting Program (QRP). As shown in Table 10-1, the QRP items are very similar to the FIM elements and associated modifiers. Because the QRP elements overlap the FIM data elements, CMS believes that the collection of FIM elements and associated modifiers is no longer necessary and places undue burden on providers. Accordingly, in fiscal year 2020, CMS will remove the FIM elements and associated modifiers from the IRF–PAI and will rely on QRP items to assign cases to CMGs.

Because the QRP items are defined differently from the FIM elements and use a different scale of measurement, using QRP items for CMG assignment will require some revisions to the CMG classification system. However, CMS anticipates the similarity

between and overlap of the FIM and QRP items mean that CMS can replace FIM elements with QRP items without materially changing the case-mix classification system. All other aspects of the classification system will be unchanged, including the RIC structure, the assignment of comorbidity tiers, and the methodology for calculating the payment weights. The CMG classification system will continue to have 21 RICs (plus 2 for patients who have very short stays or who die in the IRF). However, the revisions will result in some consolidation of CMGs so that, instead of 92 CMGs, there will be 88. At the RIC level, the changes to the payment weights will be relatively small.

CMS plans to implement these revisions in a budget-neutral manner. CMS's initial analysis indicates that the change will redistribute payments across providers, resulting in increased aggregate payments for hospital-based and nonprofit IRFs as well as for smaller IRFs. This projected shift in payments suggests that assessments of patients' motor and cognitive function are not completely consistent across the two sets of data elements; that is, a patient's FIM function scores are not entirely predictive of the patient's QRP function scores.

One potential reason for these differences is that the FIM score is intended to reflect the patient's "lowest" level of function during the time of assessment, whereas the QRP score is intended to measure the patient's "usual" functional level during the period of assessment. In addition, functional status data are generally obtained by observation of the patient and are somewhat subjective. Moreover, the FIM scores are used to determine payment to IRFs, while the QRP scores have had no effect on payment to date. Because payment is materially affected by patients' FIM scores at admission—with higher payments associated with lower functional status—providers have a financial incentive when scoring the FIM elements to minimize patients' assessed levels of function at admission. No such incentive has existed for QRP scoring. However, that situation will change when CMS begins to use QRP scores to determine payment.

(continued next page)

Changes to the IRF assessment instrument and case-mix groups in fiscal year 2020 (cont.)

In a comment letter to the Secretary, the Commission supported replacing FIM items and modifiers with QRP items because doing so would relieve providers of having to report this information on functional status twice, using different definitions and measurement scales (Medicare Payment Advisory Commission 2018). Further, Section 1899(b)(3) of the Improving Medicare Post-Acute Care Transformation Act of 2014 requires the Secretary to replace existing setting-specific patient assessment data that duplicate or overlap the required

PAC-standardized data “as soon as practicable.” At the same time, moving toward an IRF classification system that adjusts payments using data elements that are standardized across all PAC settings is a necessary step toward a unified PAC PPS. The Commission noted, however, that once the QRP scores are used to determine payment, providers likely will respond quickly, devoting resources to improving the coding of the QRP functional measures, altering their QRP scoring practices, or both. ■

**TABLE
10-1**

Selected FIM™ elements and QRP counterparts on the IRF-PAI

	FIM	QRP
Self-care: Eating	<i>FIM item A</i> —The use of suitable utensils to bring food to the mouth, chewing and swallowing, once the meal is presented in the customary manner on a table or tray.	<i>GG130-A</i> —The ability to use suitable utensils to bring food to the mouth and swallow food once the meal is placed before the patient.
Self-care: Bathing	<i>FIM item C</i> —Washing, rinsing, and drying the body from the neck down (excluding the back) in either a tub, shower, or sponge/bed bath.	<i>GG130-E</i> —The ability to bathe self in shower or tub, including washing, rinsing, and drying self.
Self-care: Dressing upper body	<i>FIM item D</i> —Dressing and undressing above the waist, as well as applying and removing a prosthesis or orthosis when applicable.	<i>GG130-F</i> —The ability to put on and remove shirt or pajama top; includes buttoning, if applicable.
Self-care: Toileting	<i>FIM item F</i> —Maintaining perineal hygiene and adjusting clothing before and after using a toilet, commode, bedpan, or urinal.	<i>GG130-C</i> —The ability to maintain perineal hygiene, adjust clothes before and after using the toilet, commode, bedpan, or urinal.
Transfers: Bed, chair, wheelchair	<i>FIM item I</i> —All aspects of transferring from bed to a chair, or wheelchair, or coming to a standing position, if walking is the typical mode of locomotion.	<i>GG170-D</i> —The ability to come to a standing position from sitting in a chair, or on the side of the bed. <i>GG170-E</i> —The ability to safely transfer to and from a bed to a chair (or wheelchair).
Transfers: Toilet	<i>FIM item J</i> —Includes safely getting on and off a standard toilet.	<i>GG170-F</i> —The ability to safely get on and off a toilet or commode.
Locomotion: Walk	<i>FIM item L</i> —Ability to/level of assistance needed to walk 150 feet.	<i>GG170-K</i> —Once standing, the ability to walk at least 150 feet in a corridor or similar space.

Note: FIM™ (Functional Independence Measure™), QRP (Quality Reporting Program), IRF-PAI (Inpatient Rehabilitation Facility–Patient Assessment Instrument).

Source: CMS, Inpatient Rehabilitation Facility–Patient Assessment Instrument, Version 1.5.

**TABLE
10-2**

The number and share of FFS IRF cases with neurological conditions and brain injury continued to grow, 2004–2017

Condition	Share of IRF Medicare FFS cases				Meets compliance threshold ^a	Percentage point change		
	2004	2008	2016	2017		2004–2008	2008–2016	2016–2017
Stroke	16.6%	20.4%	20.2%	20.5%	yes	3.8	–0.2	0.2
Other neurological conditions	5.2	8.0	13.6	15.0	yes	2.9	5.6	1.3
Fracture of the lower extremity	13.1	16.0	10.9	10.4	yes	3.0	–5.2	–0.4
Debility	6.2	9.1	10.6	10.6	no	2.9	1.5	0.0
Brain injury	3.9	7.0	9.9	10.7	yes	3.0	2.9	0.8
Other orthopedic conditions	5.2	6.1	8.2	7.9	no	0.9	2.1	–0.2
Cardiac conditions	5.3	4.6	6.0	5.5	no	–0.6	1.4	–0.3
Major joint replacement of lower extremity	24.1	13.1	5.4	4.4	^b	–11.0	–7.7	–1.1
Spinal cord injury	4.2	4.3	4.9	4.9	yes	0.1	0.6	0.0
All other	16.3	11.3	10.1	9.8	^c	–5.0	–1.1	–0.3

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.

^aThe 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.

^bCases 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.

^cConditions 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.

- 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 face-to-face physician 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.⁶ The combination of renewed enforcement of the threshold and additional restrictions 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 10-2). IRF volume stabilized after 2008, but increases in certain neurological

**TABLE
10-3**

Mix of Medicare FFS IRF cases differed by provider type, selected conditions, 2017

Condition	Freestanding		Hospital based	
	For profit	Nonprofit	For profit	Nonprofit
Stroke	16%	26%	20%	26%
Other neurological conditions	21	8	13	10
Fracture of the lower extremity	9	8	13	11
Debility	11	8	12	10
Brain injury	10	12	11	11
Other orthopedic conditions	10	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.

conditions—Parkinson’s disease and neuromuscular disorders—continued. Between 2008 and 2017, the number of IRF discharges with other neurological conditions almost doubled, climbing 99 percent, and the number of discharges with brain injuries (traumatic and nontraumatic combined) rose 63 percent, while the total number of Medicare IRF discharges increased 6 percent (data not shown). Notably, the number of cases with other orthopedic conditions, cardiac conditions, and debility also rose, though a sizable share of these cases do not count toward the compliance threshold.⁷ The number of hip and knee replacement cases going to IRFs continued their downward trajectory, declining an additional 55 percent from 2008 to 2016. IRFs also saw a large decline in cases for fractures of the lower extremity, falling 26 percent over the same period, even though they count toward the compliance threshold.

The distribution of case types differs by type of IRF (Table 10-3). For example, in 2017, only 16 percent of cases in freestanding for-profit IRFs were admitted for rehabilitation following a stroke, compared with 26 percent of cases in hospital-based nonprofit IRFs. Likewise, 21 percent of cases in freestanding for-profit IRFs were admitted with other neurological conditions, more than twice the share admitted to hospital-based nonprofit IRFs. Cases with other orthopedic conditions also made up a higher share of cases in freestanding for-profit facilities than in all other IRFs. By contrast, the

share of cases with brain injury or debility was similar across IRF types.

In 2017, 8.5 percent of IRF cases received high-cost outlier payments, although the share varied by case type. For example, high-cost outlier cases accounted for 12.6 percent of spinal cord injury cases, 10.7 percent of stroke cases, 6.3 percent of cases with other neurological conditions, and 5.2 percent of other orthopedic conditions. Outlier cases were also distributed unevenly among IRFs. High-cost outliers accounted for almost 15 percent of hospital-based IRF cases compared with 2.6 percent of freestanding IRF cases. On average, high-cost outliers had an average length of stay that was 7.3 days longer than non-outlier cases (19.4 days vs. 12.1 days). Outlier cases were also more likely to have comorbidities that increased case mix (65.6 percent of outlier cases vs. 55.1 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.⁸ 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 neurological 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 among the IRF CMGs and differences in relative profitability across CMGs in future analyses. It is necessary to identify and reduce variation in costs among CMGs and properly calibrate payments with costs for each group 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). 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.

Data suggest patients not assessed uniformly 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 suggests that IRFs differ in their assessment of patients’ motor and cognitive function, raising more generalized concerns about patient assessment data (Medicare Payment Advisory Commission 2016).

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.

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.

These findings led the Commission to recommend that CMS ensure payment accuracy and help improve program integrity by reviewing medical records and conducting other research as necessary (see text box on March 2016 recommendations). More recently, the Commission has begun to explore data integrity issues related to post-acute care (PAC) patient assessment data more broadly, and we expect to evaluate whether such data can continue to be used in Medicare’s payment systems or quality incentive programs.

Are Medicare payments adequate in 2019?

To assess whether payments for fiscal year 2019 are adequate to cover the costs providers incur and how much providers’ costs are expected to change in the coming year (2020), 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 2017

Type of IRF	Share of Medicare FFS discharges 2017	Number of IRFs						Average annual change		
		2009	2013	2014	2015	2016	2017	2009-2013	2013-2016	2016-2017
All IRFs	100%	1,196	1,161	1,177	1,182	1,188	1,178	-0.7%	0.8%	-0.8%
Urban	93	992	977	1,013	1,020	1,026	1,019	-0.4	1.6	-0.7
Rural	7	204	184	164	162	162	159	-2.5	-4.2	-1.9
Freestanding	52	225	243	251	262	273	279	0.8	4.0	2.2
Hospital based	48	971	918	926	920	915	899	-1.4	-0.1	-1.7
Nonprofit	39	732	677	681	681	676	655	-1.9	0.0	-3.1
For profit	54	295	322	338	352	370	392	2.2	4.7	5.9
Government	7	169	155	149	138	133	125	-2.1	-5.0	-6.0

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 was 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. Components may not sum to totals due to missing data.

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 PAC 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. Moreover, the marginal profit, an indicator of whether IRFs with excess capacity have an incentive to treat more Medicare beneficiaries, was robust for both freestanding and hospital-based IRFs, thus providing a very positive indicator of patient access.

Number of IRFs and occupancy rates suggest adequate capacity and supply

After declining from a peak of 1,235 facilities in 2005 (data not shown) to 1,161 facilities in 2013, the number of IRFs increased in 2014 and continued to grow through

2016 to 1,188 facilities nationwide (Table 10-4). But in 2017, the number of IRFs fell 0.8 percent to 1,178 facilities. IRFs are not the sole provider of rehabilitation services in communities; SNFs also provide rehabilitation services in an institutional setting, 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 2017, about 76 percent of IRFs were distinct units in acute care hospitals; the rest were freestanding facilities. However, because hospital-based units have, on average, fewer beds and a lower share of Medicare discharges, they accounted for only 48 percent of Medicare discharges. Overall, 33 percent of IRFs were for-profit entities. Freestanding IRFs were far more likely to be for profit than were hospital-based IRFs (78 percent vs. 19 percent; data not shown). In 2017, 54 percent of Medicare discharges were from for-profit facilities. Over time, the number of hospital-based and nonprofit IRFs has declined,

**TABLE
10-5**

The number of IRF cases per FFS beneficiary decreased in 2017

	2004	2006	2008	2010	2012	2014	2016	2017	Average annual change		
									2004-2008	2008-2016	2016-2017
Number of cases	495,349	404,633	356,312	359,307	373,284	375,590	390,514	379,885	-7.9%	1.2%	-2.7%
Cases per 10,000 FFS beneficiaries	135.6	111.9	100.4	99.7	100.1	99.2	100.9	98.5	-7.2	0.1	-2.4
Payment per case	\$13,290	\$15,380	\$16,646	\$17,085	\$17,795	\$18,632	\$19,714	\$20,322	5.8	2.1	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	339,087	338,887	350,353	340,175	-7.9	1.0	-2.9

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.

while the number of freestanding and for-profit IRFs has increased. Between 2009 and 2017, the number of hospital-based IRFs fell by 7 percent and the number of nonprofit IRFs fell by 10 percent, while the number of freestanding IRFs and for-profit IRFs rose by 19 percent and 33 percent, respectively.

In 2017, 28 IRFs closed; most were hospital-based units. At the same time, 19 new IRFs opened. Slightly more than half of the new IRFs were hospital-based units. Of the new hospital-based units, about a third were for profit; of the new freestanding facilities, half were for profit. Acute care hospitals find that IRF units can 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 2017, the average IRF occupancy rate remained at 65 percent, the same level as in 2016. Occupancy rates were higher in freestanding IRFs (69 percent) than in hospital-based IRFs (61 percent). These rates suggest that capacity is more than adequate to meet demand for IRF services.

IRF Medicare volume decreased in 2017

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 1.2 percent per year from 2008 to 2016. Between 2016 and 2017, however, the number of FFS IRF cases fell 2.7 percent, to a little less than 380,000 cases.

In 2017, the number of IRF cases per 10,000 FFS beneficiaries fell to 98.5, down 2.4 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 usually interpreted to mean at least three hours of therapy a day for at least five days a week. Yet, compared with all Medicare beneficiaries, those admitted to IRFs in 2017 were disproportionately over age 85.

With the decline in the number of IRF cases per FFS beneficiary, FFS Medicare's share of IRF discharges fell to 58 percent of total discharges as the volume of IRF cases across all payers rose slightly in 2017 (data not shown).

Marginal profit provides incentive to treat more Medicare beneficiaries

Another measure of access is whether providers have a financial incentive to expand the number of Medicare beneficiaries they serve. In considering 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. 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 increase the number of Medicare beneficiaries they serve.⁹ We found that Medicare payments exceed marginal costs by a substantial amount—19.4 percent for hospital-based IRFs and 38.8 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 overall Medicare margins.

Quality of care: Steady or improved for most measures

Between 2012 and 2017, the Commission has tracked 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 an acute care hospital (see text box on measures of quality). During this period, most measures were steady or improved.

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 PAC 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).¹⁰ The measure of rehospitalization in the 30 days after discharge reflects in part 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 rate of risk-adjusted potentially avoidable rehospitalizations during the IRF stay has been about 2.6 percent (Table 10-6, p. 266). (Lower rates are better.) Meanwhile, between 2012 and 2017, the rate of risk-adjusted potentially avoidable rehospitalization within 30 days after discharge from an IRF declined from 4.8 percent to 4.3 percent in 2015, then rose to 4.7 percent in 2016 and 2017.

We also examined rates of discharge to the community and to SNFs. We found that between 2012 and 2017, the national average for the risk-adjusted community discharge rate increased from 74.2 percent to 76.0 percent.¹¹ (Higher rates are better.) Between 2012 and 2014, the national average for the risk-adjusted rate of discharge to SNFs increased from 6.9 percent to 7.1 percent, but subsequently declined to 6.8 percent in 2017 (lower rates are better).

The Commission also considers functional status at admission and discharge, measured using the motor and cognitive scores on the IRF-PAI. This instrument incorporates the 18-item Functional Independence MeasureTM (FIMTM) scale to assess the level of disability in motor and cognitive functioning and the burden of

Measures of inpatient rehabilitation facility quality

In its assessment of the quality of care in inpatient rehabilitation facilities (IRFs), the Commission has historically examined 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 could have been 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 are 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. ■

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

**TABLE
10-6**

Risk-adjusted quality indicators for IRFs held steady or improved slightly from 2012 to 2017

Measure	2012	2013	2014	2015	2016	2017	Percent change 2012-2017
Potentially avoidable rehospitalizations during IRF stay	2.8%	2.6%	2.7%	2.6%	2.7%	2.6%	-7.1%
Discharged to a SNF	6.9%	6.9%	7.1%	7.0%	6.8%	6.8%	-1.4
Discharged to the community	74.2%	74.9%	75.2%	75.0%	75.9%	76.0%	2.4
Potentially avoidable rehospitalizations during 30 days after discharge from IRF	4.8%	4.8%	4.7%	4.3%	4.7%	4.7%	-2.1
Motor FIM™ gain	22.1	22.4	22.9	23.1	23.7	24.0	8.6
Cognitive FIM™ gain	3.5	3.7	3.7	3.7	3.8	3.9	10.3

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility), FIM™ (Functional Independence Measure™). 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. 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: MedPAC analysis of Inpatient Rehabilitation Facility–Patient Assessment Instrument data from CMS.

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 2017, the mean gain (positive change) in the motor FIM score during an IRF stay was 24.0, while the mean gain for the cognitive FIM score was 3.9 (Table 10-6). (Bigger gains are better.) From 2012 to 2017, the average risk-adjusted gain in IRF patients’ motor and cognitive FIM scores (as assigned by IRFs) increased about 9 percent and 10 percent, respectively. 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.

Overall, the Commission finds that most quality measures have been stable or improved slightly over the past five

years. However, improvements in the functional status measures should be viewed with some caution given that they are self-reported rather than claims-based measures. The Commission is evaluating the reliability of patient assessment data and the appropriateness of using these data for payment on quality assessment of PAC providers.

Variation in quality measures across IRFs

IRFs varied widely in their performance on Medicare’s quality measures (Table 10-7). In 2017, the lowest performing quartile of IRFs had a risk-adjusted rate of discharge to a SNF that was 8.7 percent or higher, compared with 4.2 percent or lower for the best performing quartile of providers. (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 73.1 percent or lower, compared with 79.2 percent or higher for the best performing quartile of providers. (A higher rate of discharge to the community is better.) Rehospitalization rates also varied: The worst performing quartile had risk-adjusted rates of potentially avoidable rehospitalization during the IRF stay that were at or above 3.5 percent, compared with 1.7 percent or below for the

**TABLE
10-7**

Performance on risk-adjusted quality measures varied across IRFs in 2017

Measure	Risk-adjusted rate			Ratio of best to worst performing quartile
	Mean	Worst performing quartile	Best performing quartile	
Potentially avoidable rehospitalizations during IRF stay	2.6%	3.5%	1.7%	0.49
Discharged to a SNF	6.8%	8.7%	4.2%	0.48
Discharged to the community	76.0%	73.1%	79.2%	1.08
Potentially avoidable rehospitalizations during 30 days after discharge from IRF	4.7%	5.8%	3.4%	0.59
Motor FIM™ gain	24.0	21.2	26.4	1.25
Cognitive FIM gain	3.9	3.0	4.7	1.34

Note: IRF (inpatient rehabilitation facility), FIM™ (Functional Independence Measure™), 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. Mean rates are calculated for all facilities with 25 or more Medicare fee-for-service stays. 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.

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

best performing quartile. (A lower rate of readmissions is better.) Variation was also observed in the two FIM gain measures, but because these measures are self-reported, they could reflect reporting differences more than performance differences.

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

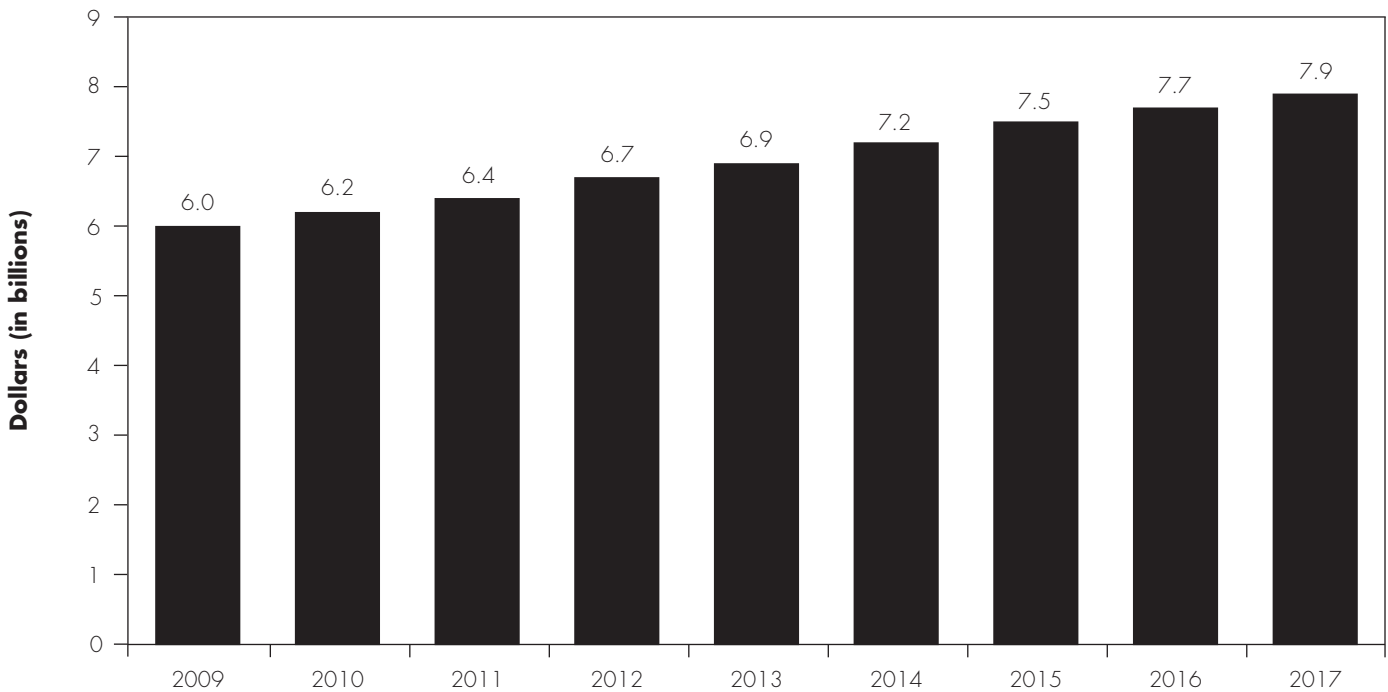
More than three-quarters of IRF providers are hospital-based units that would access any necessary capital through their parent institutions. Overall, as detailed in the hospital chapter, hospitals’ access to capital remained strong in 2017 with a continued high level of bond issuances. New construction spending has declined and has shifted more to outpatient than inpatient capacity (Conn 2017). Large hospital systems in recent years have invested significantly in the ambulatory setting, as opposed to the acute inpatient setting, in an effort to access faster growing markets and offer access to lower cost settings in a business environment shifting toward value-based care (Barclays 2018).

Market analysts indicate that the IRF industry’s largest chain, Encompass Health (formerly HealthSouth)—

which owned almost half of freestanding IRFs in 2017 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 Encompass Health traditionally has prioritized building new facilities over acquiring existing facilities, which allows the company to maintain control over facility size, layout, and amenities. In 2017, the company opened four new facilities and two more in 2018, with two additional facilities scheduled to open in 2019. The new facilities are frequently joint ventures with acute care hospitals (HealthSouth Corporation 2018). As part of a vertical integration strategy, the company has acquired home health agencies and hospice providers to expand its PAC business and drive more effective collaboration between its rehabilitation facilities and home health agencies.

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.

IRFs’ access to capital depends in large part on their total (all-payer) profitability. In 2017, total margins for freestanding IRFs remained healthy, with an aggregate

**FIGURE
10-1****Program spending for IRF services has grown steadily since 2009**

Note: IRF (inpatient rehabilitation facility).

Source: Office of the Actuary 2018.

margin of 10.4 percent, up 0.8 percentage point from 2016. Profitability varied by ownership. In 2017, for-profit IRFs had an aggregate total margin of 12.5 percent compared with 5.6 percent for nonprofit IRFs. Data are not available to calculate total margins for hospital-based IRFs. However, in 2017, hospitals' aggregate total margins across all lines of service for hospitals with and without IRF units were similar, at 7.0 percent and 7.2 percent, respectively.

Medicare payments and providers' costs: Medicare margins remained high in 2017

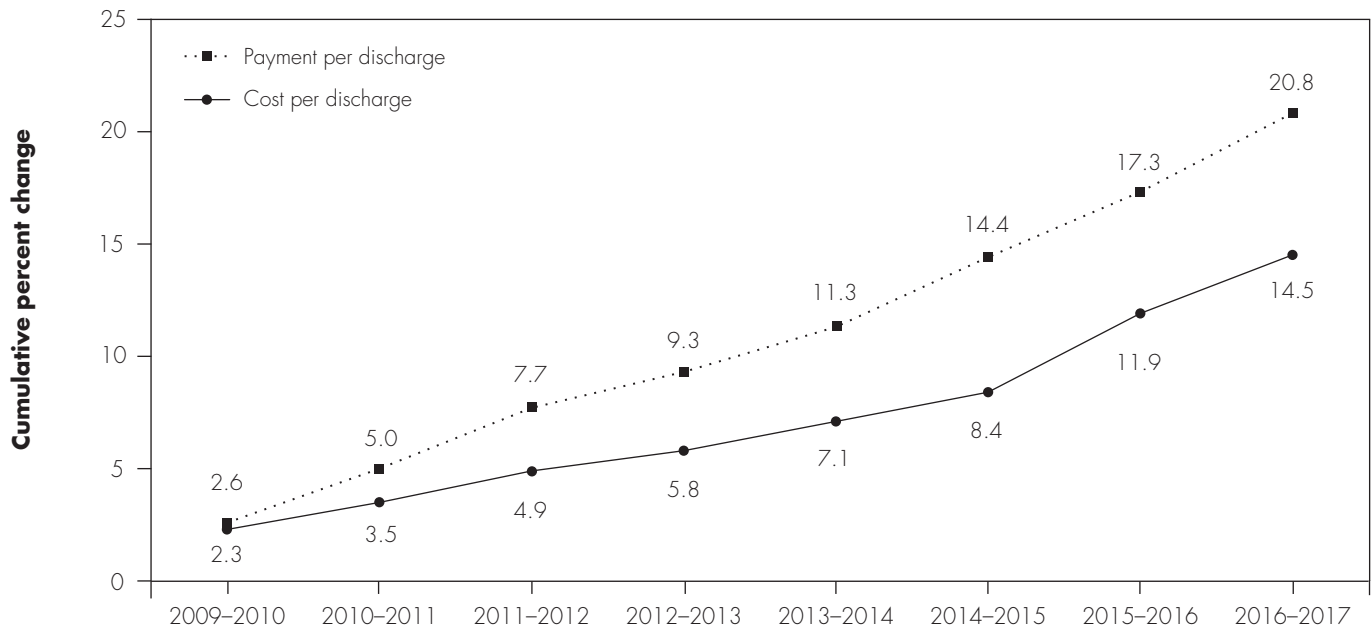
Aggregate Medicare margins grew steadily between 2009 and 2015 and increased again in 2017 to 13.8 percent (Table 10-8, p. 270). Medicare margins in freestanding IRFs were 25.5 percent in 2017, down slightly from a peak of 26.7 percent in 2015. Hospital-based IRF margins were comparatively low at 1.5 percent in 2017, 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.

Trends in spending and cost growth

The Office of the Actuary estimates that Medicare FFS spending for IRF services in fiscal year 2017 was \$7.9 billion (Figure 10-1). Program spending has been growing, on average, more than 3 percent per year since 2009. A combination of increases in the number of Medicare beneficiaries receiving care in IRFs (average growth of 0.5 percent per year) and payment increases averaging 2.6 percent contributed to this growth in spending.

Since 2009, payments have been growing faster than costs (Figure 10-2). From 2009 to 2015, the cumulative growth in cost per discharge was 8.4 percent, an average of just 1.4 percent per year. The cumulative growth in cost per discharge for freestanding for-profit IRFs was especially

FIGURE 10-2**IRFs' payments per discharge increased cumulatively more than costs, 2009-2017**

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.

slow over this period, at just 2.2 percent (data not shown). In contrast, payments per discharge grew more rapidly than costs, climbing a cumulative 14.4 percent over this period (an average of 2.2 percent per year) and 15.1 percent for freestanding for-profit IRFs (latter figure not shown). These differences in per case cost and payment growth led to a steady rise between 2009 and 2015 in aggregate Medicare margins, which climbed from 8.4 percent to 13.9 percent (Table 10-8, p. 270; 2009 data not shown).

Between 2015 and 2016, cost growth outpaced payment growth for the first time since 2009, climbing 3.6 percent, the fastest rate of cost growth since 2008. However, from 2016 to 2017, payments per discharge again increased faster than costs, growing by 3.4 percent compared with 2.6 percent for costs, contributing to an increase in the 2017 Medicare margin to 13.8 percent. From 2015 through 2017, aggregate Medicare margins for IRFs remained above 13 percent (Table 10-8, p. 270).

Margins vary widely

Financial performance varied across IRFs. In 2017, the aggregate margin for freestanding IRFs (which accounted for 53 percent of Medicare discharges from IRFs) was 25.5 percent; hospital-based IRFs had an aggregate margin of 1.5 percent (Table 10-8, p. 270). Margins varied by ownership as well, with for-profit IRFs having a substantially higher aggregate Medicare margin in 2017 than nonprofit IRFs (23.8 percent vs. 2.2 percent). (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 12.0 percent (data not shown). Freestanding for-profit IRFs (which accounted for 45 percent of Medicare discharges from IRFs) had an aggregate margin of 27.8 percent (data not shown). Among hospital-based IRFs, the aggregate margin for nonprofit units (which accounted for 32 percent of Medicare discharges from IRFs) was 0.1 percent, compared with 6.6 percent for for-profit units (which

**TABLE
10-8**

Aggregate FFS Medicare IRF margins remained high in 2017

Type of IRF	Share of Medicare discharges, 2017	Margins								
		2004	2006	2008	2010	2012	2014	2015	2016	2017
All IRFs	100%	16.7%	12.5%	9.4%	8.6%	11.2%	12.2%	13.9%	13.3%	13.8%
Hospital based	47	12.2	9.9	3.8	-0.6	0.7	0.7	2.2	0.9	1.5
Freestanding	53	24.7	17.5	18.2	21.4	23.9	25.2	26.7	25.8	25.5
Nonprofit	38	12.8	10.9	5.3	2.1	2.1	1.7	3.5	1.6	2.2
For profit	55	24.4	16.3	16.8	19.6	22.9	23.6	24.9	24.2	23.8
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	12.6	14.3	13.6	14.2
Rural	7	13.2	9.0	7.2	4.7	6.3	6.4	8.6	9.4	8.4
Number of beds										
1 to 10	2	3.7	-3.6	-4.9	-10.3	-6.9	-10.9	-7.5	-9.9	-10.5
11 to 24	21	10.5	7.3	1.2	-3.3	-1.2	-0.3	-0.4	-0.2	0.6
25 to 64	48	18.3	13.7	10.0	10.6	12.3	14.0	16.0	15.0	15.8
65 or more	29	21.5	17.8	17.4	17.5	21.0	20.6	23.1	22.4	21.9
Medicare share										
<50%	19	12.9	11.1	5.1	0.4	2.4	2.3	3.7	2.9	3.0
50% to 75%	56	17.1	12.6	9.5	9.6	12.5	14.1	16.1	15.4	15.8
>75%	25	19.6	13.9	13.5	13.6	20.5	20.2	20.8	20.2	21.1

Note: FFS (fee-for-service), 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.

accounted for 10 percent of Medicare discharges from IRFs; data not shown).

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 27 percent lower than that of hospital-based IRFs (\$12,069 vs. \$16,645, respectively). Hospital-based IRFs are far more likely than freestanding IRFs to be nonprofit, which could contribute to the disparity in unit costs. But even nonprofit freestanding IRFs had a median standardized cost per discharge that was 15 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 manifesting in routine costs (Medicare Payment Advisory Commission 2015).

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. For example, aggregate inpatient Medicare margins for hospitals are consistently higher for hospitals with IRF units versus hospitals without (0.8 percentage

point higher in 2017). Aggregate overall Medicare margins for hospitals with IRF units were 2.0 percentage points higher in 2017.

Margins also varied by facility size. In 2017, the aggregate Medicare margin for IRFs with 10 or fewer beds was -10.5 percent, compared with 21.9 percent for IRFs with 65 or more beds (Table 10-8). These differences are in large measure due to differences in economies of scale leading to higher costs in smaller facilities. The median standardized cost for IRFs with fewer than 10 beds was 53 percent higher than for IRFs with 65 or more beds (\$18,636 compared with \$12,200; data not shown). Smaller facilities also tend to have lower occupancy rates than large facilities (54 percent compared with 68 percent in 2017), also contributing to differences in costs.

Medicare margins tended to rise as the share of Medicare patients increased. The aggregate Medicare margin was 3.0 percent for IRFs in which fewer than half of discharges were covered by FFS Medicare, compared with 21.1 percent for IRFs in which more than three-quarters of discharges were covered by FFS Medicare (Table 10-8).

Numerous factors contribute to lower margins 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 be less stringent in cost control

Hospital-based IRFs appear to be less stringent in their cost control. Between 2009 and 2017, costs per case for hospital-based IRFs grew 21.1 percent, compared with 10.3 percent 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 among freestanding IRFs, where the cumulative increase in costs per case from 2009 to 2017 for nonprofits (26.5 percent) far outstripped that of for-profit facilities (8.2 percent).

Hospital-based IRFs have a different mix of patients

There are marked differences in hospital-based and freestanding IRFs' mix of cases. Between 2009 and 2015, freestanding IRFs compared with hospital-based IRFs admitted a larger share of patients with stroke as

the primary reason for rehabilitation (24 percent vs. 17 percent). Similarly, freestanding IRFs compared with hospital-based IRFs admitted larger shares of cases with other neurological conditions (19 percent vs. 10 percent) and other orthopedic conditions (10 percent vs. 6 percent). Notably, the impairment groups of other neurological and other orthopedic conditions encompass a broader range of conditions than do 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 can more easily meet the requirements of the 60 percent rule while keeping down costs. Further, some case types are 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 2017, 15 percent of hospital-based IRF cases qualified for high-cost outlier payments, compared with 3 percent of freestanding IRF cases. Indeed, 85 percent of Medicare's IRF outlier payments were made to hospital-based facilities. Though these payments diminish losses per case for such outliers, they do not completely cover the 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 appear to assess their patients differently

Historically, 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 aggressively assess their patients in a way that maximizes payment. 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.

Efficient provider analysis

The Commission is required by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 to

Identifying relatively efficient inpatient rehabilitation facilities

The Commission is required by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 to consider the costs associated with an efficient provider. This year, we attempted to identify and examine the financial performance of inpatient rehabilitation facilities (IRFs) that had consistently low costs per discharge and high quality. We calculated the cost per discharge using cost report and claims data and adjusted for differences in area wages; mix of cases; and prevalence of high-cost outliers, short-stay outliers, and transfer cases. For quality measures, we used risk-adjusted rates of potentially avoidable rehospitalizations during the IRF stay and risk-adjusted rates of discharge to a skilled nursing facility. To be included in the group of IRFs that furnished relatively low-cost, high-quality care, an IRF had to be (1) in the best performing third of the distribution of adjusted cost per discharge or of one of the quality measures for three consecutive years (2014 through 2016) and (2) not in the worst performing third of the distribution of adjusted cost per discharge or either of the quality measures for three consecutive

years. Only IRFs with at least 25 Medicare fee-for-service discharges were included in the analysis.

The method we used to assess performance attempts to limit drawing incorrect conclusions about performance based on poor data. Using three years to categorize IRFs as efficient (rather than just one year) avoids categorizing providers based on random variation or on one “unusual” year. After determining whether an IRF was relatively efficient based on having relatively low costs and good quality care for three years in a row, we calculated performance on several quality and cost measures in 2017. By first assigning an IRF to a group (relatively efficient or other) and then examining the group’s performance in the next year, we avoid having a facility’s poor data affect both its own categorization and the assessment of the group’s performance. Thus, an IRF’s erroneous data in 2014, 2015, or 2016 could result in its inaccurate assignment to a group, but because the group’s performance is assessed with data from 2017, these “bad” data would not directly affect the assessment of the group’s performance. ■

consider the costs associated with efficient providers. The Commission follows two principles when selecting a set of efficient providers. First, the providers must do relatively well on both cost and quality metrics. Second, the performance has to be consistent, meaning that the provider cannot have poor performance on any metric in any of three consecutive years preceding the year under evaluation. The Commission’s approach is to develop a set of criteria and then examine how many providers meet them. It does not establish a set share (for example, 10 percent) of providers to be considered efficient and then define criteria to meet that pool size.

This year is the first one in which the Commission has examined the financial performance of relatively efficient IRFs. The text box explains how we identified relatively efficient IRFs. Our analysis finds that relatively efficient IRFs had lower rehospitalization rates and discharge to SNFs than other IRFs. While payment rates to all IRFs were similar, standardized costs per discharge for this group were 18 percent lower, leading to a large difference

in the median Medicare margin, which was 16.5 percent for the relatively efficient group compared with 1.0 percent for other IRFs (Table 10-9).

Relatively efficient IRFs were on average larger and had higher occupancy rates compared with other IRFs, leading to greater economies of scale. The mix of cases also differed somewhat between the relatively efficient and other IRFs. Relatively efficient IRFs had a higher average case-mix index, more cases with other neurological conditions, but smaller shares of stroke cases compared with other IRFs.

Although all types of facilities were represented in the relatively efficient group of IRFs, they were much more likely to be freestanding and/or for profit. In fact, over half of Encompass Health facilities (formerly HealthSouth) were in the relatively efficient IRF group. Hospital-based nonprofit IRFs were less likely to be in the relatively efficient group, although they accounted for over a third (37.2 percent) of this group.

**TABLE
10-9**

Characteristics of relatively efficient providers, 2017

Performance in 2017	Type of IRF		Ratio of relatively efficient to other IRFs
	Relatively efficient IRFs	Other IRFs	
Median:			
Rehospitalization rate	2.4%	2.6%	0.91
Discharge to SNF rate	4.6%	7.0%	0.65
Payment per discharge	\$20,624	\$20,569	1.00
Standardized cost per discharge	\$13,385	\$16,390	0.82
Medicare margin	16.5%	1.0%	N/A
Facility case-mix index	1.34	1.28	1.05
Length of stay (in days)	12.7	12.7	1.00
Occupancy rate	69%	61%	1.21
Number of beds	30	23	1.30
Share of discharges that were for:			
Stroke	19.5%	23.2%	0.84
Other neurological conditions	10.3%	6.9%	1.49
Share of facilities that were:			
Freestanding	40.5%	20.7%	N/A
For profit	51.2%	34.3%	N/A
Hospital-based nonprofit	37.2%	52.5%	N/A

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility). IRFs were identified as “relatively efficient” based on a cost measure (costs per discharge) and two quality measures (rates of readmission and discharge to SNFs) between 2014 and 2016. Relatively efficient IRFs were those in the best third of the distribution for one measure and not in the worst third for any measure in each of the three years. Costs per discharge were standardized for differences in area wages; mix of cases; and prevalence of high-cost outliers, short-stay outliers, and transfer cases. Quality measures were calculated for all facilities with 25 or more fee-for-service stays. “Rehospitalization rate” refers to potentially avoidable rehospitalizations during the IRF stay. High rates of rehospitalization and discharge to SNF indicate worse quality. “Other neurological conditions” includes multiple sclerosis, Parkinson’s disease, polyneuropathy, and neuromuscular disorders.

Source: MedPAC analysis of Medicare cost report data, Medicare Provider Analysis and Review data, and Inpatient Rehabilitation Facility–Patient Assessment Instrument data from CMS for 2013 to 2016.

How should Medicare payments change in 2020?

To estimate 2019 payments, costs, and margins with 2017 data, the Commission considers policy changes effective in 2018 and 2019, 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 2019 margin include:

- an update of 1.0 percent for fiscal year 2018, as required by MACRA¹²; and
- an update of 1.35 percent in 2019 based on an IRF market basket increase of 2.9 percent with offsetting productivity adjustment and PPACA adjustments of 0.8 percent and 0.75 percent, and changes to the high-cost outlier fixed loss amount in 2019, which will lower 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 2018 and 2019.

Considering these assumptions, we project an aggregate Medicare margin of 11.6 percent for IRFs in 2019.

For fiscal years 2009 through 2017, the Commission recommended a 0 percent update to the IRF payment rate. In its calculations for fiscal year 2019, however, as the aggregate margin neared historic highs, the Commission recommended in its March 2017 and March 2018 reports that the Congress reduce IRF payment rates by 5 percent. Because such action was not taken and because, 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 14.4 percent, while cost growth was 8.4 percent—well below market basket levels. In 2016, the gap between payments and costs narrowed somewhat as per case cost growth (3.6 percent in aggregate) exceeded payment growth (2.9 percent in aggregate) for the first time since 2008. As a result, the aggregate margin in 2016 declined but remained high at 13.3 percent. In 2017, payments again increased faster than costs, raising margins to 13.8 percent. This high aggregate margin indicates that aggregate Medicare payments continue to substantially exceed the costs of caring for beneficiaries in IRFs. Absent congressional action, payments to IRFs will continue to increase in fiscal year 2020 by an estimated 2.7 percent, the largest payment rate update in the past decade.

Reducing the payment rate for IRFs would better align Medicare payments with the costs of IRF care. The Commission continues to believe that the high-cost outlier pool should be expanded, as previously recommended in 2016, 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 and conduct other research necessary to improve the accuracy of payments and protect program integrity. With the shift to using the QRP functional measures in 2020 to classify cases into CMGs, it is important that CMS conduct focused medical reviews to ensure consistency in reporting across providers using the new measures.

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. We estimate the combined effect of reducing the payment rate for IRFs by 5 percent and expanding the outlier pool would decrease aggregate payments to freestanding IRFs by 6.2 percent; to hospital-based IRFs by 3.8 percent; to for-profit IRFs by 6.0 percent; and to nonprofit IRFs by 4.2 percent. Changes being made by the Secretary to the CMGs by using the QRP functional measures in place of the FIM, though budget neutral, may result in some small shift in payments toward hospital-based and nonprofit facilities in the short term.

RECOMMENDATION 10

For 2020, the Congress should reduce the fiscal year 2019 Medicare base 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 2017 and our

projected margin for 2019 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. However, CMS has been required by statute to apply an adjusted market basket increase each year. Between 2009 and 2017, the cumulative increase in payments per case for all IRFs was 20.8 percent, while costs per case rose 14.5 percent, a difference of more than 6 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 2020 consists of a forecasted 3.2 percent market basket

update and a forecasted –0.5 percent productivity adjustment of the market basket update.¹³ Relative to current law, this recommendation would decrease Medicare spending by between \$250 million and \$750 million in 2019 and by between \$5 billion and \$10 billion over five years.

Beneficiary and provider

- We do not expect this combination of recommendations to have an adverse effect on either Medicare beneficiaries’ access to care or out-of-pocket spending. This recommendation could increase the financial pressure on some providers. 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 there are many more SNFs than IRFs nationwide.
- 2 More information about the prospective payment system for IRFs is available at http://medpac.gov/docs/default-source/payment-basics/medpac_payment_basics_18_irf_final_sec.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; 3 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 In September 2018, the Office of Inspector General (OIG) released a report indicating that many inpatient rehabilitation stays did not comply with all Medicare coverage and documentation requirements for reasonable and necessary care. OIG's analysis found that only 45 of 220 sampled stays met the requirements (Office of Inspector General 2018).
- 6 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 criteria of major joint replacement—a condition that was commonly treated in IRFs at that time—such that only a certain subset of patients with that condition would count toward the compliance threshold.
- 7 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. Prior Commission analysis of 2013 data showed that less than a third of these cases met the compliance threshold.
- 8 This analysis of FFS IRF claims and assessment data from 2013 excluded cases that were not preceded by an acute care hospital stay within 30 days of the IRF admission.
- 9 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.
- 10 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.
- 11 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.
- 12 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 requires that the increase factor for fiscal year 2018 be 1.0 percent.
- 13 This market basket forecast was made in the third quarter of 2018. When setting the update for fiscal year 2020, CMS will use the most recent forecast available at that time, which may differ from the number we report here.

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