CHAPTER 11

Long-term care hospital services

RECOMMENDATION

11 The Secretary should eliminate the update to the payment rates for long-term care hospitals for fiscal year 2015.

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

(The Commission's recommendation for long-term care hospital payment reform is included with its acute care hospital update recommendation in Chapter 3.)

CHAPTER 11

Long-term care hospital services

Chapter summary

Long-term care hospitals (LTCHs) provide care to beneficiaries who need hospital-level care for relatively extended periods. To qualify as an LTCH for Medicare payment, a facility must meet Medicare's conditions of participation for acute care hospitals (ACHs), and its Medicare patients must have an average length of stay greater than 25 days. In 2012, Medicare spent $5.5 billion on care furnished in 420 LTCHs nationwide. About 124,000 beneficiaries had more than 140,000 LTCH stays. On average, Medicare accounts for about two-thirds of LTCHs' discharges.

Assessment of payment adequacy

***Beneficiaries' access to care*—**We have no direct measures of beneficiaries' access to LTCH services. Instead, we consider the capacity and supply of LTCH providers and changes over time in the volume of services they furnish. Trends suggest that access to care has been maintained.

- ***Capacity and supply of providers*—**Growth in the number of LTCHs filing Medicare cost reports slowed considerably in the later years of the five-year moratorium imposed by the Medicare, Medicaid, and SCHIP Extension Act of 2007 and subsequent amendments. In the last year of the moratorium (2012), the number of LTCHs rose from 417 to 420, while the number of LTCH beds increased 0.5 percent.

In this chapter

- ***Volume of services*—**From 2011 to 2012, the number of beneficiaries who had LTCH stays increased by 0.7 percent. Controlling for growth in the number of fee-for-service (FFS) beneficiaries, we found that the number of LTCH cases declined 1 percent between 2011 and 2012. This reduction in per capita admissions is consistent with (though smaller than) that seen in other settings. The small decline is due in part to the congressional moratorium that limited growth in facilities and follows a period of relatively steady growth in the number of LTCH cases per FFS beneficiary.

***Quality of care*—**LTCHs only recently began submitting quality of care data to CMS. Those data are not yet available for analysis. Using claims data, we found stable or declining unadjusted rates of readmission, death in the LTCH, and death within 30 days of discharge for almost all of the top 25 diagnoses in 2012.

***Providers' access to capital*—**For the past few years, the availability of capital to LTCHs has not reflected current reimbursement rates but rather uncertainty regarding possible changes to Medicare's regulations and legislation governing LTCHs. Since 2007, the Congressionally imposed moratorium on new beds and facilities has reduced opportunities for expansion and the need for capital. With the expiration of the moratorium at the end of 2012, LTCH companies appear to be acting with caution, likely because of the continued scrutiny of Medicare spending on LTCH care.

***Medicare payments and providers' costs*—**Since 2007, LTCHs have held cost growth below the rate of increase of the market basket index, a measure of inflation in the prices of goods and services LTCHs buy to provide care. Between 2011 and 2012, Medicare payments continued to increase faster than provider costs, resulting in an aggregate 2012 Medicare margin of 7.1 percent. Financial performance in 2012 varied across LTCHs and may reflect differences in cost control and response to payment incentives.

We estimate that LTCHs' aggregate Medicare margin will be 6.5 percent in 2014. If the sequester remains in place, the margin would be expected to be about 2 percentage points lower.

On the basis of these indicators, the Commission believes LTCHs can continue to provide Medicare beneficiaries with access to safe and effective care with no update to the payment rates in fiscal year 2015.

If the Congress does not implement the Commission's recommendation for LTCH payment reform (summarized below), our update recommendation applies to Medicare's payment rate for all LTCH services. If the Congress does implement the

Commission's recommended payment reform, our update recommendation applies to Medicare's payment rate for chronically critically ill (CCI) cases in LTCHs.

Reforming the LTCH payment system

The Commission has been considering for some time whether Medicare is paying accurately for services furnished in LTCHs. LTCHs have positioned themselves as providers of hospital-level care for long-stay CCI patients, but nationwide most CCI patients are cared for in ACHs, and most LTCH patients are not CCI. Medicare's payments to LTCHs are higher than those made for similar patients in other settings. Comparatively attractive payment rates for LTCH care have resulted in an oversupply of LTCHs in some areas and may generate unwarranted use of LTCH services by patients who are not CCI.

What Medicare is purchasing with its higher LTCH payments remains unclear. Studies comparing LTCH care with that provided in ACHs have failed to find a clear advantage in outcomes for LTCH users. At the same time, some studies have found that episode payments are higher for beneficiaries who use LTCHs, while others have found that per episode spending may be the same or lower for the most medically complex patients who use LTCHs but not for those who are less severely ill. As a prudent payer, Medicare must ensure that its payments to providers are properly aligned with the resource needs of beneficiaries. The Commission has held that payment for the same set of services should be comparable regardless of where the services are provided to help ensure that beneficiaries receive appropriate, high-quality care in the least costly setting consistent with their clinical conditions.

To reduce incentives for LTCHs to admit lower acuity patients—who could be appropriately cared for in other settings at a lower cost to Medicare—the Congress should direct CMS to pay higher LTCH rates only for LTCH cases that are CCI. Non-CCI cases should be paid at rates based on the inpatient prospective payment system (IPPS) for ACHs. Savings from reducing payments for non-CCI cases in LTCHs should be allocated to the IPPS outlier pool to better match payments and costs for extraordinarily costly CCI cases in ACHs. This change is part of a package of recommended changes to hospital payments that is designed to align payment rates across settings for similar services, improving financial incentives in the Medicare program while maintaining adequate overall payments.

In the absence of patient-specific data on the metabolic, endocrine, physiologic, and immunologic abnormalities that characterize CCI patients, the Congress should define LTCH CCI cases as those that spent eight or more days in an intensive care unit (ICU) during an ACH stay immediately preceding the LTCH stay. The

Commission has determined that length of stay in the ICU is the best available proxy measure of case complexity and a good predictor of intensive resource use during post-acute care episodes that begin with an ACH stay. In CMS's Post-Acute Care Payment Reform Demonstration, length of stay in the ICU was significantly associated with post-acute care case complexity, and long ICU stays during a previous ACH stay were a distinguishing characteristic of LTCH patients. ICU length of stay is collected in the medical record and reported to CMS on the claim; therefore the information can be accessed by both the Medicare program and providers. The Commission also recommends making an exception to the eight-day ICU threshold for LTCH cases that received mechanical ventilation for 96 hours or more during an immediately preceding ACH stay. Such cases are generally considered appropriate for admission to LTCHs and higher LTCH-level payment rates.

The Pathway for SGR Reform Act of 2013 mandated changes to the LTCH payment system, including limiting higher LTCH payments to cases that spent at least three days in an ICU during an immediately preceding ACH stay. The Commission is concerned that this lower threshold may fail to distinguish the truly chronically critically ill and will allow Medicare to continue to pay too much for many cases that could be cared for appropriately in other settings at a lower cost to the program. ■

The 25-percent rule

In fiscal year 2005, CMS established a new policy—the so-called 25-percent rule—to help ensure that long-term care hospitals (LTCHs) do not function as units of acute care hospitals (ACH) and that decisions about admission, treatment, and discharge in both the ACH and the LTCH are made for clinical rather than financial reasons. The 25-percent rule uses payment adjustments to create disincentives for LTCHs to admit a large share of their patients from a single ACH. An LTCH is paid full LTCH rates for patients admitted from any ACH until the percentage of Medicare admissions from any one ACH exceeds the applicable threshold of the LTCH's Medicare cases. After the threshold is reached, the LTCH is paid the lesser of the LTCH prospective payment system rate or an amount equivalent to the ACH rate for patients with the same diagnosis.[1] Patients who were high-cost outliers in the ACH do not count toward the threshold and continue to be paid at the LTCH rate even if the threshold of admissions from that ACH has been reached.

The 25-percent rule initially applied only to colocated LTCHs (called hospitals-within-hospitals (HWHs)) and LTCH satellites. In July 2007, CMS extended the 25-percent rule to apply to freestanding LTCHs as well. But the Congress has repeatedly delayed full implementation of the 25-percent rule for most HWHs and satellites and prevented the Secretary from applying the 25-percent rule to freestanding LTCHs. Most recently, the Pathway for SGR Reform Act of 2013 set the threshold for most HWHs and satellites at 50 percent and delayed any application of the 25-percent rule to freestanding LTCHs until July 1, 2016. ■

Background

Patients with chronic critical illness—those who exhibit metabolic, endocrine, physiologic, and immunologic abnormalities that result in profound debilitation and often ongoing respiratory failure—frequently need hospital-level care for extended periods. Nationwide, most chronically critically ill (CCI) patients are treated in acute care hospitals (ACHs), but a growing number are treated in long-term care hospitals (LTCHs).[2] These facilities can be freestanding or colocated with other hospitals, as hospitals-within-hospitals or satellites. To qualify as an LTCH for Medicare payment, a facility must meet Medicare's conditions of participation for ACHs and its Medicare patients must have an average length of stay greater than 25 days. (By comparison, the average Medicare length of stay in ACHs is about five days.) There are no other criteria defining LTCHs, the level of care they provide, or the patients they treat.[3] In 2012, Medicare spent $5.5 billion on care provided in an estimated 420 LTCHs nationwide. About 124,000 beneficiaries had more than 140,000 LTCH stays. On average, Medicare accounts for about two-thirds of LTCHs' discharges.

Since October 2002, Medicare has paid LTCHs prospective per discharge rates based primarily on the patient's diagnosis and the facility's wage index.[4] Under this prospective payment system (PPS), LTCH payment rates are based on the Medicare severity long-term care diagnosis related group (MS–LTC–DRG) patient classification system, which groups patients primarily according to diagnoses and procedures. MS–LTC–DRGs are the same groups used in the acute inpatient PPS but have relative weights specific to LTCH patients, reflecting the average relative costliness of cases in the group compared with that of the average LTCH case. The LTCH PPS has outlier payments for patients who are extraordinarily costly.[5] The PPS pays differently for short-stay outlier cases (patients with shorter than average lengths of stay), reflecting CMS's contention that Medicare should pay adjusted rates for patients with relatively short lengths of stay to reflect the reduced costs of caring for them (see text box, pp. 268–269). In addition, CMS uses the so-called "25-percent rule" to discourage LTCHs from admitting too many patients from any one referring hospital (generally an ACH) (see text box, this page).

Medicare payment policies spur growth in use of LTCHs

Medicare's special payment policies for LTCHs came about when the inpatient prospective payment system (IPPS) for ACHs was implemented in 1983. About 84

Payment for short-stay outliers in long-term care hospitals

In the long-term care hospital (LTCH) payment system, Medicare may adjust payments for cases with short stays. CMS defines a short-stay outlier (SSO) case as having a length of stay less than or equal to five-sixths of the geometric average length of stay for the case type.[6] The SSO policy reflects CMS's contention that patients with lengths of stay similar to those in acute care hospitals (ACHs) should be paid at rates comparable with those under the ACH inpatient prospective payment system (IPPS). About 27.4 percent of LTCH discharges received SSO payment adjustments in fiscal year 2012, but this share varied across types of LTCHs. For example, 26.5 percent of for-profit LTCHs' cases were SSOs in fiscal year 2012, compared with 33 percent of nonprofit LTCHs' cases.

The amount Medicare pays to LTCHs for an SSO case is the lowest of:

- 100 percent of the cost of the case,
- 120 percent of the per diem amount for the Medicare severity long-term care diagnosis related group (MS–LTC–DRG) multiplied by the patient's length of stay,
- the full MS–LTC–DRG payment, or
- a blend of the IPPS amount for the same type of case and 120 percent of the MS–LTC–DRG per diem amount. The LTCH per diem payment amount makes up more of the total payment amount as the patient's length of stay increases.

Since December 29, 2012, CMS has applied a different standard to cases with the very shortest lengths of stay—those with stays less than or equal to the IPPS average length of stay for the same type of case plus one standard deviation. These cases are paid the lowest of the four payment amounts listed above, with the fourth amount being an amount comparable with the IPPS payment rate rather than a blended amount. The Commission estimates that in fiscal year 2014, 46.7 percent of SSO cases—or 12.6 percent of all LTCH cases—will be very short stay outliers and subject to the IPPS payment amount.[7]

Generally, for the same case type, the IPPS payment is substantially less than the payment under the LTCH prospective payment system. As an example, for a case assigned to MS–LTC–DRG 207 (respiratory system diagnosis with prolonged mechanical ventilation), the

(continued next page)

hospitals with average lengths of stay greater than 25 days were excluded from the IPPS because their patient costs could not be accurately predicted by the IPPS patient classification system and weights. These LTCHs, as they came to be called, had predominantly begun as tuberculosis and chronic disease hospitals. Medicare continued to pay LTCHs on a cost basis in accordance with the payment system established in the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) until CMS implemented an LTCH PPS in 2003. During those years, as the number of LTCHs climbed, the types of patients treated by LTCHs changed dramatically. The Commission and others have raised concerns that the lack of meaningful criteria for admission to LTCHs means that these providers can admit less complex patients who could be cared for appropriately in less expensive settings.

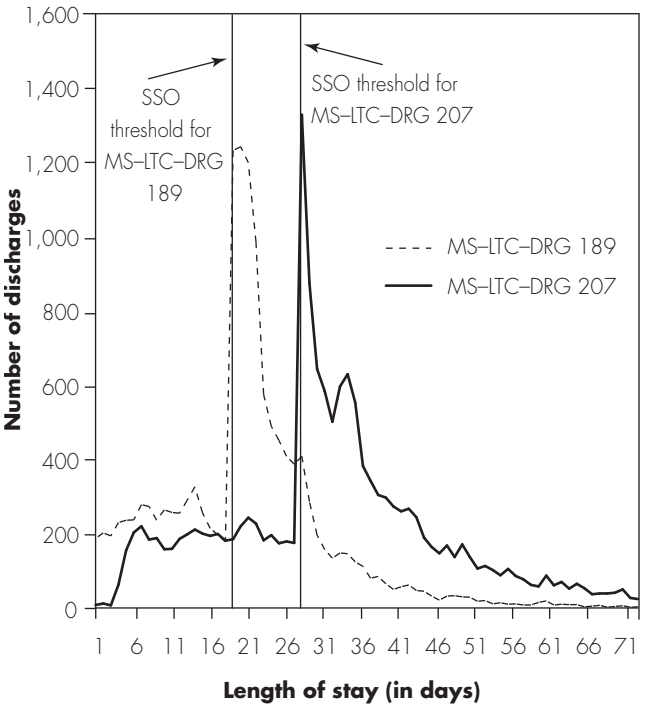
Strong incentives to shift patients from ACHs to LTCHs

Medicare's IPPS and LTCH payment policies create strong incentives for ACHs to shift costly patients to LTCHs (and other post-acute care providers) and for LTCHs to expand capacity. Under the IPPS, per case payments encourage ACHs to reduce their costs by shortening lengths of stay. In the early years of the IPPS, average length of stay declined at a rate of about 1.2 percent per year, falling between 1984 and 1991 from 8.8 days to 8.1 days (Prospective Payment Assessment Commission 1996). The rate of decline accelerated sharply in the early 1990s, with average length of stay dropping by an additional full day, to 7.1 days by 1994. This drop was accompanied by extraordinary growth in the supply and use of post-acute

Payment for short-stay outliers in long-term care hospitals (cont.)

FIGURE 11–1

Many LTCH cases in FY 2012 were discharged in the period immediately following the short-stay outlier threshold



Note: LTCH (long-term care hospital), FY (fiscal year), SSO (short-stay outlier), MS–LTC–DRG (Medicare severity long-term care diagnosis related group). Cases in MS–LTC–DRG 207 are those with a respiratory system diagnosis and prolonged mechanical ventilation. Cases in MS–LTC–DRG 189 are those with pulmonary edema and respiratory failure.

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

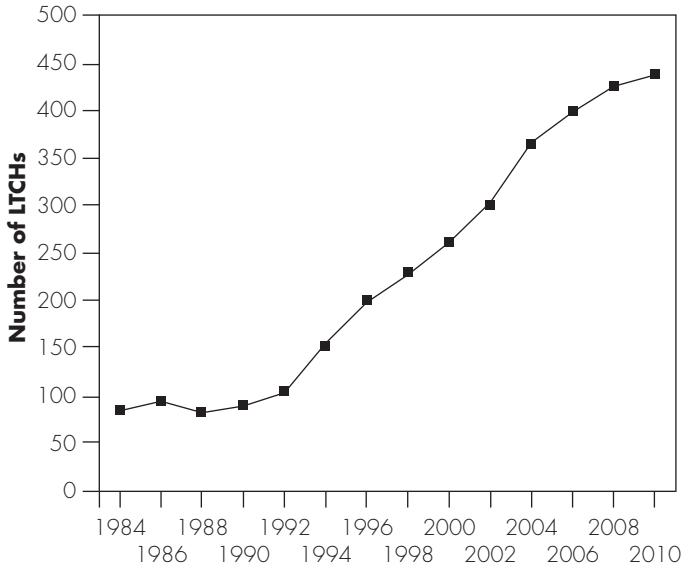
standard IPPS payment in 2014 is $30,480, while the standard LTCH payment is $80,098. LTCHs therefore have a strong financial incentive to keep patients until their lengths of stay exceed the SSO threshold for the relevant case type, and they appear to respond to that incentive (Figure 11-1). Analysis of lengths of stay by MS–LTC–DRG for 2012 shows that the number of discharges rose sharply immediately after the SSO threshold. This pattern held true across MS–LTC–DRGs and for every category of LTCH. The data strongly suggest that LTCHs' discharge decisions are influenced at least as much by financial incentives as by clinical indicators.

CMS could substantially reduce these financial incentives by lowering the payment penalty for discharging patients before the SSO threshold. For example, short-stay cases could be defined as cases with a covered length of stay that is more than one day shorter than the geometric average length of stay for the MS–LTC–DRG. As with the transfer policy for short-stay cases in the IPPS, payment for the first day of a short-stay LTCH case could be two times the per diem payment rate for the MS–LTC–DRG; payment for each additional day would then be set at the per diem rate, up to the maximum of the full standard per discharge payment (which would be reached one day before the average length of stay for the DRG). This formula would reduce the substantial cliff in payments that exists under current policy and better match incremental payments for short-stay cases to the provider's incremental costs. ■

care services, including LTCH services. Between 1990 and 1996, the number of LTCHs more than doubled from 89 to 198; growth continued apace until about 2005 (Figure 11-2, p. 270). From 1990 to 2005, the number of Medicare discharges from LTCHs increased ninefold.

Medicare's payment method for LTCHs itself contributed to growth in the use of services. Medicare paid LTCHs under TEFRA rules for about 20 years—much longer than the Congress initially intended. Consequently, several flaws inherent in TEFRA—which would have had little significance in the short run—led to growth in supply, utilization, and expenditures over time. Under TEFRA, each LTCH was paid on the basis of its average cost per discharge, up to a facility-specific limit. The limit was set at the LTCH's average cost per discharge in a designated base year and updated annually for inflation. LTCHs that kept their average costs per discharge below their limits could receive bonus payments. This payment system proved to be financially attractive to new providers. New LTCHs could maximize their costs in their first years of operation, thereby establishing a high facility-specific limit. The new entrant could then quickly reduce its costs below its limit, resulting in reimbursement of its full costs plus bonus payments.

FIGURE 11–2 **LTCHs have been one of the fastest growing providers in Medicare**



Note: LTCH (long-term care hospital).

Source: Medicare Payment Advisory Commission 2012a; ProPAC 1996.

Although it was hoped that the LTCH PPS would create better incentives for providers to control their costs, evidence suggests that base payments under the PPS were initially set too high. Given the inflationary incentives of TEFRA, using aggregate costs generated under that payment system to establish budget-neutral prospective payment rates resulted in overly generous payments. In the last years of TEFRA, Medicare spending (which reflected underlying costs) for LTCH services was growing at an average annual rate of about 18 percent. That rate accelerated in the first years of the PPS, with LTCH spending climbing 27 percent per year from 2002 to 2005, while the number of discharges rose 11 percent per year. During that same period, LTCH margins shot up from –0.2 percent to 11.9 percent.[8] Beginning in 2005, CMS implemented a number of regulatory changes that dramatically reduced spending growth, including the introduction of the 25-percent rule, lower payments for many short-stay outlier cases, and smaller annual increases to the base payment rate.

Payment disparities across settings contribute to growth in use of LTCHs

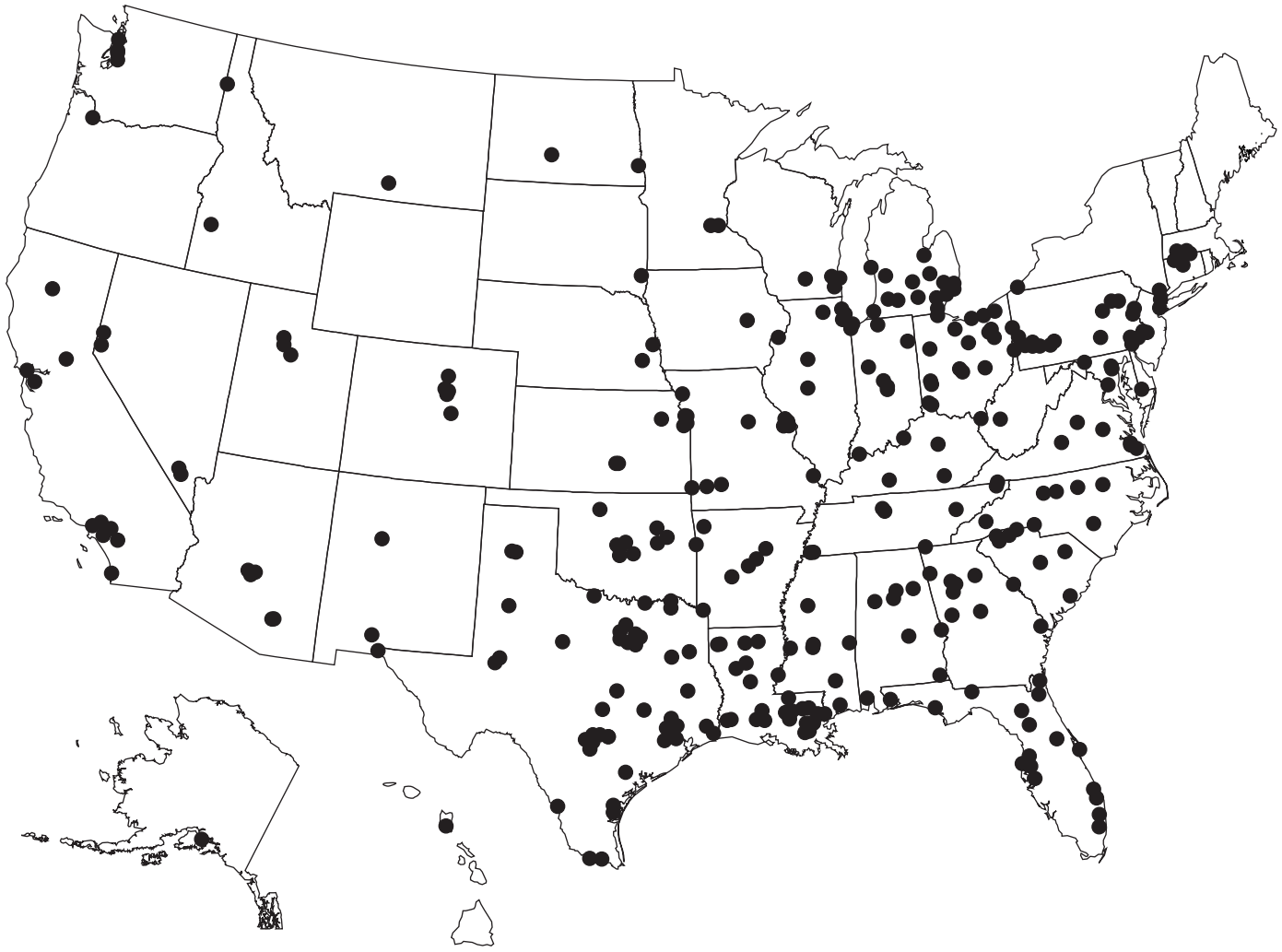
Although LTCHs have positioned themselves as providers of post-acute care for CCI and other medically complex patients, most CCI patients nationwide are cared for in ACHs (and later in skilled nursing facilities (SNFs)), and many LTCH patients are not CCI (Centers for Medicare & Medicaid Services 2013, Dalton et al. 2012a, Kahn et al. 2010, Medicare Payment Advisory Commission 2013). But Medicare's payments to LTCHs are typically far higher than those made for similar patients in other settings (Gage et al. 2007, Kahn et al. 2013, Kandilov and Dalton 2011).[9] CMS has long been concerned that incentives under the ACH PPS and the LTCH PPS encourage hospitals to transfer costly patients to LTCHs. Unnecessary transfer of patients to LTCHs increases costs to the Medicare program by triggering two inpatient payments (one for the ACH stay and one for the LTCH stay) for what otherwise might have been one inpatient stay (or one inpatient stay and one less-costly stay in a SNF or other post-acute care setting).

Comparatively attractive payment rates for LTCH care have encouraged an oversupply of facilities in some areas and overuse of LTCH services by patients who are not CCI. Due in part to state certificate-of-need programs that prevent or limit the opening of certain types of health care facilities, many new LTCHs have located in markets where LTCHs already exist instead of in markets with few or no direct competitors.[10] As a result, LTCHs are not distributed evenly across the country (Figure 11-3). Some areas have no LTCHs, underscoring the fact that medically complex patients can be treated appropriately in other settings.[11] At the same time, some areas have many LTCHs. This concentration has financial implications for the Medicare program because an oversupply of LTCH beds has resulted in LTCHs admitting less-complex cases that could appropriately be treated in less costly settings. Previous Commission analysis of LTCH claims from 2010 found that, in markets where LTCHs are used most frequently, the average LTCH case mix was lower than in markets where LTCHs are used less often (Medicare Payment Advisory Commission 2013).

As a prudent payer, Medicare must ensure that its payments to providers are properly aligned with the resource needs of beneficiaries. In addition, the Commission has held that payment for the same set of services should be comparable regardless of where the services are provided to help ensure that beneficiaries receive appropriate, high-quality care in the least costly setting consistent with their clinical conditions.

FIGURE 11–3

Long-term care hospitals are not distributed evenly across the nation, 2012



Source: MedPAC analysis of cost report data from CMS.

Are Medicare payments adequate in 2014?

To address whether payments for 2014 are adequate to cover the costs providers incur and how much providers' costs are expected to change in the coming year (2015), we examine several indicators of payment adequacy. Specifically, we assess beneficiaries' access to care by examining the capacity and supply of LTCH providers and changes over time in the volume of services furnished, quality of care, providers' access to capital, and the relationship between Medicare payments and providers' costs.

Beneficiaries' access to care: Growth over time in supply and volume suggests continued access to care

We have no direct measures of beneficiaries' access to needed LTCH services. There are no clear criteria describing the need for LTCH care, and the absence of LTCHs in many areas of the country makes it particularly difficult to assess the need for LTCH care and therefore the adequacy of supply (since beneficiaries in areas without LTCHs receive similar services in other settings). Instead, we consider the capacity and supply of LTCH providers and changes over time in the volume of services they furnish.

TABLE 11–1 **Growth in the number of LTCHs slowed in the later years of the moratorium**

					Congressionally imposed moratorium					Average annual change		
Type of LTCH	2004	2005	2006	2007	2008	2009	2010	2011	2012	2004–2005	2005–2009	2009–2012
All	315	366	373	382	388	411	416	417	420	16.2%	2.9%	0.7%
Urban	299	342	348	358	362	388	389	392	393	14.4	3.2	0.4
Rural	16	24	25	24	26	23	27	25	27	50.0	–1.1	5.5
Nonprofit	67	78	76	76	77	79	82	80	80	16.4	0.3	0.4
For profit	229	265	274	283	291	313	314	319	322	15.7	4.2	0.9
Government	19	23	23	23	20	19	20	18	18	21.1	–4.7	–1.8

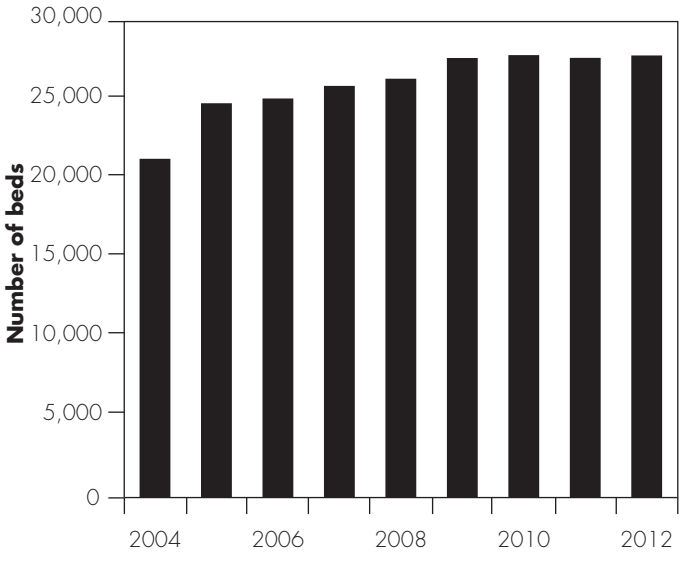
Note: LTCH (long-term care hospital). The Medicare, Medicaid, and SCHIP Extension Act of 2008 and subsequent amendments imposed a five-year moratorium on new LTCHs and new LTCH beds in existing facilities. Exemptions from the moratorium were allowed in certain specified circumstances.

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

Capacity and supply of providers: Supply stabilized during the congressionally mandated moratorium

The Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA) and subsequent amendments imposed a limited moratorium on new LTCHs and new beds in existing LTCHs from December 29, 2007, to December 28, 2012.[12] We examined Medicare cost report data to assess the number of LTCH beds and facilities.[13] Growth in the number of LTCHs filing Medicare cost reports slowed considerably in the later years of the moratorium (Table 11-1). In the last year of the moratorium (2012), the number of LTCHs rose from 417 to 420, while the number of LTCH beds nationwide increased 0.5 percent (Figure 11-4). New LTCHs were able to enter the Medicare program only if they met specific exceptions to the moratorium. Most of the new LTCHs filing cost reports during the moratorium were for-profit facilities. Overall, in 2012, more than 75 percent of LTCHs were for profit, and 94 percent were located in urban areas.

FIGURE 11–4 **Growth in the number of LTCH beds has slowed**



Note: LTCH (long-term care hospital).

Source: MedPAC analysis of cost report data from CMS.

Volume of services: Number of LTCH users holding steady

Beneficiaries' use of services suggests that access is adequate. Growth in the number of LTCH cases was high in the first years of the LTCH PPS but declined from 2005 to 2007 (Table 11-2). Much of this decrease may be explained by a decline in the number of Medicare FFS beneficiaries resulting from growth in enrollment in Medicare Advantage plans. CMS regulations that reduced payments for LTCH services also likely slowed growth in LTCH admissions during that period and beyond. From 2011 to 2012, the number of beneficiaries who had LTCH stays ("LTCH users") increased by 0.7 percent. Because the number of fee-for-service (FFS) beneficiaries grew

TABLE 11–2 **The number of Medicare LTCH cases and users holding steady**

						Average annual change			
	2004	2005	2007	2011	2012	2004–2005	2005–2007	2007–2011	2011–2012
Cases	121,955	134,003	129,202	139,715	140,463	9.9%	–1.8%	2.0%	0.5%
Cases per 10,000 FFS beneficiaries	33.4	36.4	36.2	38.3	37.9	9.0	–0.3	1.4	–1.0
Spending (in billions)	$3.7	$4.5	$4.5	$5.4	$5.5	21.6	0.0	4.7	2.7
Spending per FFS beneficiary	$101.3	$122.2	$126.0	$148.0	$149.6	20.7	1.5	4.1	1.1
Payment per case	$30,059	$33,658	$34,769	$38,664	$39,493	12.0	1.6	2.7	2.1
Average length of stay (in days)	28.5	28.2	26.9	26.3	26.2	–1.1	–2.3	–0.5	–0.4
Users	108,814	119,282	114,299	122,838	123,652	9.6	–2.1	1.8	0.7

Note: LTCH (long-term care hospital), FFS (fee-for-service).

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

at a somewhat faster pace during that period, the number of LTCH cases per FFS beneficiary declined 1 percent. This reduction in per capita admissions is consistent with (though smaller than) the reduction seen in other settings. The small decline is due at least in part to the congressional moratorium that limited growth in facilities, and it follows a period of relatively steady growth in the number of LTCH cases per FFS beneficiary from 2007 to 2011. Access to LTCH care appears to be holding fairly steady, even in the presence of the moratorium.

Compared with all Medicare beneficiaries, those admitted to LTCHs are disproportionately disabled (under age 65), over age 85, and diagnosed with end-stage renal disease. They are also more likely to be African American. The higher rate of LTCH use by African American beneficiaries may be due to the concentration of LTCHs in areas of the country with larger African American populations (Dalton et al. 2012b, Kahn et al. 2010). Another contributing factor may be a greater incidence of critical illness in this population (Mayr et al. 2010). At the same time, African American beneficiaries may be more likely to opt for LTCH care since they are less likely to choose withdrawal from mechanical ventilation in the intensive care unit (ICU), have do-not-resuscitate orders, or elect hospice care (Barnato et al. 2009, Borum et al. 2000, Diringer et al. 2001).

LTCH discharges are concentrated in a relatively small number of diagnosis groups. In fiscal year 2012, the top 25 LTCH diagnoses made up 63 percent of all LTCH discharges (Table 11-3, p. 274). The most frequently occurring diagnosis was MS–LTC–DRG 207, respiratory diagnosis with ventilator support for 96 or more hours. Nine of the top 25 diagnoses, representing 34 percent of LTCH cases, were respiratory conditions or involved prolonged mechanical ventilation.

Quality of care: Meaningful measures are not available, but trends for gross indicators are stable

Unlike most other health care facilities, LTCHs only recently began submitting a limited set of quality data to CMS (see text box, p. 275); those data are not yet available for analysis. Until the data are available, the Commission uses aggregate trends in rates of in-facility mortality, mortality within 30 days of discharge, and readmissions from LTCHs to ACHs. Although we use risk-adjusted measures to assess changes in quality in other health care settings, we do not risk adjust measures of LTCH quality because the available data are not adequate for this purpose. Claims data, which are used to risk adjust ACH measures of quality, do not provide the level of detail needed to adequately adjust for differences in risk

TABLE 11–3 **The top 25 MS–LTC–DRGs made up two-thirds of LTCH discharges in 2012**

MS–LTC–DRG	Description	Discharges	Percentage
207	Respiratory system diagnosis with ventilator support 96+ hours	15,842	11.3%
189	Pulmonary edema and respiratory failure	14,036	10.0
871	Septicemia or severe sepsis without ventilator support 96+ hours with MCC	8,954	6.4
177	Respiratory infections and inflammations with MCC	4,546	3.2
592	Skin ulcers with MCC	4,004	2.8
208	Respiratory system diagnosis with ventilator support < 96 hours	3,060	2.2
949	Aftercare with CC/MCC	3,060	2.2
539	Osteomyelitis with MCC	2,605	1.9
190	Chronic obstructive pulmonary disease with MCC	2,466	1.8
193	Simple pneumonia and pleurisy with MCC	2,259	1.6
919	Complications of treatment with MCC	2,200	1.6
559	Aftercare, musculoskeletal system and connective tissue with MCC	2,190	1.6
682	Renal failure with MCC	2,142	1.5
314	Other circulatory system diagnoses with MCC	2,061	1.5
862	Postoperative and post-traumatic infections with MCC	2,053	1.5
570	Skin debridement with MCC	1,965	1.4
870	Septicemia or severe sepsis with ventilator support 96+ hours	1,928	1.4
166	Other respiratory system OR procedures with MCC	1,899	1.4
4	Tracheostomy with ventilator support 96+ hours or primary diagnosis except face, mouth, and neck without major OR procedure	1,840	1.3
291	Heart failure and shock with MCC	1,749	1.2
853	Infectious and parasitic diseases with OR procedure with MCC	1,561	1.1
602	Cellulitis with MCC	1,523	1.1
603	Cellulitis without MCC	1,487	1.1
981	Extensive OR procedure unrelated to principal diagnosis with MCC	1,455	1.0
371	Major gastrointestinal disorders and peritoneal infections with MCC	1,424	1.0
	Top 25 MS–LTC–DRGs	88,309	62.9
	Total	140,496	100.0

Note: MS–LTC–DRG (Medicare severity long-term care diagnosis related group), LTCH (long-term care hospital), MCC (major complication or comorbidity), CC (complication or comorbidity), OR (operating room). MS–LTC–DRGs are the case-mix system for LTCHs. Columns may not sum due to rounding.

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

across LTCH patients because the variation in patient severity and complexity in LTCHs is small compared with that in other health care settings. LTCH cases are highly concentrated in a few MS–LTC–DRGs; in addition, the vast majority of LTCH patients have multiple diagnoses and comorbidities. Clinicians and researchers participating in a Commission panel on LTCH quality measures agreed that risk adjustment was unnecessary for some proposed LTCH quality measures (Medicare Payment Advisory Commission 2011).

In 2012, 10 percent of LTCH cases were readmitted to an ACH. Thirteen percent of LTCH cases died in the LTCH, and another 12 percent died within 30 days of discharge from the LTCH. Mortality rates varied markedly by diagnosis group. Among patients with a principal diagnosis of septicemia with prolonged ventilator support, 37 percent died in the LTCH and an additional 13 percent died within 30 days of discharge. By comparison, among patients with a principal diagnosis of cellulitis without major complications or comorbidities, 1 percent died in the LTCH and an additional 3 percent died within 30 days

Quality measures for long-term care hospitals

The Patient Protection and Affordable Care Act of 2010 requires CMS to collect data on quality in long-term care hospitals (LTCHs) and implement a pay-for-reporting program by 2014.[14] Beginning October 1, 2013, CMS pays LTCHs for reporting three measures—catheter-associated urinary tract infections, central line catheter-associated bloodstream infections, and new or worsened pressure ulcers. Data on urinary tract and central line infections are collected through the National Healthcare Safety Network (NHSN), an Internet-based surveillance system maintained by the Centers for Disease Control and Prevention (CDC). The data elements needed to calculate the pressure ulcer measure are collected using a data instrument called the LTCH Continuity Assessment Record and Evaluation (CARE) Data Set.

On October 1, 2014, CMS will begin collecting data on the share of LTCH patients assessed for and appropriately given influenza vaccine, as well as influenza vaccination coverage among health care personnel. Data on the share of patients appropriately given influenza vaccine will be collected using the LTCH CARE Data Set, while data on influenza vaccination coverage among LTCH personnel will be collected through the CDC's NHSN. Payments for reporting for these two measures will begin on October 1, 2015.

CMS has announced that it intends to begin collecting data to support the development of three additional measures: LTCH-acquired cases of methicillin-resistant *staphylococcus aureus* (MRSA), LTCH-acquired cases of *Clostridium difficile* (*C. difficile)* infection, and the share of LTCH patients experiencing falls resulting in major injury. CMS will begin collecting data related to MRSA and *C. difficile* infections via the CDC's NHSN on January 1, 2015, with payments for reporting beginning on October 1, 2016. CMS will begin collecting data on patients experiencing falls resulting in major injury using the CARE Data Set on January 1, 2016, with payments for reporting beginning on October 1, 2017.

CMS also intends to begin using claims data to calculate LTCHs' rates of all-cause unplanned readmissions to acute care hospitals. Provider feedback on readmission rates will begin in January 2016. ■

of discharge. Among the top MS–LTC–DRGs in 2012, patients with a diagnosis of complications of treatment with major complication or comorbidity (MS–LTC–DRG 919) had the highest readmission rate (17 percent).[15]

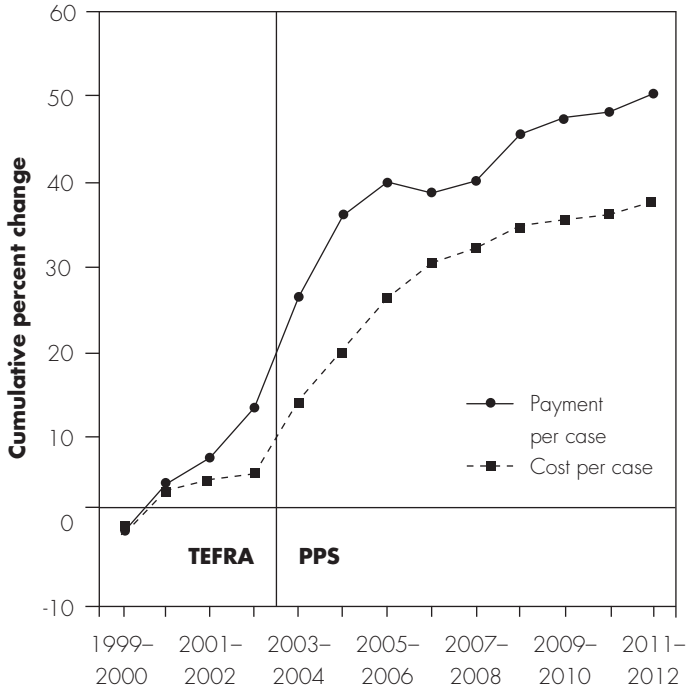
We considered readmission and mortality trends for the top LTCH diagnoses over the period from 2008 to 2012. Although rates of readmission and death can vary from year to year, over time we found stable or declining rates of readmission and both death in LTCHs and death within 30 days of discharge for these diagnoses.

Providers' access to capital: Uncertainty about possible policy changes slows investment

Access to capital allows LTCHs to maintain, modernize, and expand their facilities. If LTCHs were unable to access capital, it might in part reflect problems with the adequacy of Medicare payments, since Medicare accounts for about half of LTCH total revenues. However, for the past few years, the availability of capital says more about uncertainty regarding changes to regulations and legislation governing LTCHs than it does about current reimbursement rates. Payment reductions implemented by CMS and a congressional moratorium on new LTCH beds and facilities from December 2007 through December 2012, combined with ongoing concern by the policy community about the appropriateness of LTCH admissions appear to have altered industry behavior for the time being. Although the moratorium has lifted, LTCHs appear to be taking a "wait and see" approach. As discussed in the text box (p. 285), the Pathway for SGR Reform Act of 2013 will reimpose a moratorium on new LTCHs and LTCH beds from January 1, 2015, until September 30, 2017, which will limit future opportunities for growth and reduce the need for capital.

Some LTCHs and LTCH companies have been positioning themselves for a changing reimbursement environment and what they believe are inevitable reductions in payments to LTCHs. Kindred Healthcare, which owns more than one-quarter of all LTCHs, has continued to pursue an "integrated market" strategy, whereby the company operates SNFs, home health agencies, outpatient

FIGURE 11–5 **LTCHs' per case payments continue to increase more than costs**



Note: LTCH (long-term care hospital), TEFRA (Tax Equity and Fiscal Responsibility Act of 1982), PPS (prospective payment system). Percent changes are calculated based on consistent two-year cohorts of LTCHs.

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

rehabilitation providers, and LTCHs within a single market in order to position itself as an integrated provider of post-acute care (Kindred Healthcare 2013a). Kindred hopes this approach will make the company a natural partner for ACHs and accountable care organizations (Barclays 2013). This strategy is also intended to improve the chain's ability to control its mix of patients and costs and limit the impact of payment policy changes in any one post-acute care sector. As part of this strategy, in the past year the company acquired 11 new facilities and other post-acute care providers while selling 23 LTCHs and SNFs in markets it identified as not conducive to its integrated cluster model (Kindred Healthcare 2013b).

Medicare's payments and providers' costs: Growth in payments continues to outpace growth in costs

Since 2007, LTCHs have held cost growth below the rate of increase in the market basket index, a measure of inflation in the prices of goods and services LTCHs buy to provide care. Between 2011 and 2012, Medicare payments continued to increase faster than provider costs, resulting in an aggregate 2012 Medicare margin of 7.1 percent. Financial performance in 2012 varied across LTCHs, reflecting differences in cost control and response to payment incentives.

Reductions in the LTCH base rate slowed spending growth in 2011 and 2012

In the first three years of the LTCH PPS, Medicare spending for LTCH services grew rapidly, climbing an average of 29 percent per year. CMS's subsequent changes to LTCH payment policies slowed growth in spending between 2005 and 2008 to less than 1 percent per year. MMSEA halted or rolled back the implementation of some CMS regulations designed to address issues of overpayments to LTCHs. As a result, spending jumped more than 6 percent per year between 2008 and 2010.[16] Although the MMSEA provisions continued through fiscal year 2012, spending growth slowed between 2010 and 2012, due in part to mandated reductions in Medicare's LTCH payment rate for 2011 and 2012.[17]

LTCHs respond to policy changes by restraining cost growth

LTCHs appear to be responsive to changes in payment, adjusting their costs per case when payments per case change. In the first years of the PPS, cost per case increased rapidly following a surge in payment per case (Figure 11-5). Between 2005 and 2007, growth in cost per case slowed considerably as regulatory changes to Medicare's payment policies for LTCHs slowed growth in payment per case to an average of 1.3 percent per year.

Since 2007, LTCHs have held cost growth below the rate of market basket increases, likely due to ongoing concerns about possible changes to Medicare's payment policies for LTCH services. Between 2009 and 2011, the average cost per case increased less than 1 percent per year. Between 2011 and 2012, the average cost per case increased 1.6 percent.

Aggregate LTCH margins continue to grow

After the LTCH PPS was implemented in 2003, margins rose rapidly for all LTCH provider types, climbing to 11.9 percent in 2005 (Table 11-4). At that point, margins began to fall as growth in payments per case leveled off. However, in 2009, LTCH margins began to climb again as providers consistently held cost growth below that of payments. In 2012, the aggregate LTCH margin was 7.1 percent.

TABLE 11–4 **The aggregate average LTCH Medicare margin rose in 2012**

Type of LTCH	Share of discharges	2004	2005	2006	2007	2008	2009	2010	2011	2012
All	100%	9.0%	11.9%	9.7%	4.6%	3.6%	5.6%	6.7%	6.7%	7.1%
Urban	95	9.2	12.0	9.9	4.9	3.9	5.9	7.0	6.8	7.2
Rural	4	2.6	10.2	4.7	–0.4	–3.2	–3.0	–0.1	3.0	3.4
Nonprofit	14	6.9	9.1	6.5	1.4	–2.5	–0.9	–0.2	0.9	–1.4
For profit	84	10.0	13.1	10.9	5.6	5.3	7.3	8.2	8.2	8.9
Government	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: LTCH (long-term care hospital), N/A (not applicable). Share of discharges column groupings may not sum to 100 percent due to rounding or missing data. Margins for government-owned providers are not shown. They operate in a different context from other providers, so their margins are not necessarily comparable.

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

Nonprofit LTCHs may be less successful at controlling costs

Financial performance in 2012 varied across LTCHs. At 8.9 percent, margins were highest for for-profit LTCHs, which account for about three-quarters of all LTCHs and 84 percent of all LTCH cases. The aggregate margin for nonprofit LTCHs fell from 0.9 percent in 2011 to –1.4 percent. This decline was due to cost growth that exceeded growth in payments. Between 2011 and 2012, per case costs grew more than twice as fast in nonprofit LTCHs than in for-profit LTCHs. Still, more than half of nonprofit LTCHs posted positive margins in 2012.

The comparatively poor performance of nonprofit LTCHs reflected a number of differences that can affect providers' ability to control their costs. First, though occupancy rates in the two groups were fairly similar (65 percent in nonprofit LTCHs vs. 67 percent in for-profit LTCHs), nonprofit LTCHs were smaller and had fewer total cases than for-profit LTCHs (an average of 467 vs. 533). Seventy-one percent of nonprofit LTCHs had fewer than 50 beds compared with half of for-profit LTCHs. Nonprofit LTCHs therefore may benefit less than for-profit LTCHs from economies of scale. In addition, nonprofit LTCHs may be less able to control their input costs than for-profit LTCHs that are members of large chains. Those for-profit LTCH chains that own other types of post-acute care providers within a market area may have a distinct advantage over other LTCHs because they may be better able to control their mix of patients and lengths of stay. Nonprofit LTCHs had a larger share of cases with extraordinarily high costs—15.6 percent of nonprofit LTCHs cases qualified for high-cost outlier payments versus 10 percent of for-profit LTCHs' cases—although it is not clear whether this difference stems from differences in efficiency or case complexity or both. Nonprofit LTCHs also had more short-stay outliers than did for-profit LTCHs (33 percent vs. 26.5 percent) and thus received reduced payments for a larger share of their Medicare patients.

Differences between nonprofit and for-profit LTCHs in the mix of cases are difficult to evaluate. By some measures, nonprofit LTCHs appear to care for a somewhat sicker patient population. As noted above, a higher share of cases in nonprofit LTCHs qualified for high-cost outlier payments. Further, a higher share of cases in nonprofit LTCHs were high-cost outliers during an immediately preceding ACH stay (15.9 percent compared with 12.9 percent of for-profit LTCHs' cases). Nonprofit LTCHs also had a slightly higher share of cases that had long ICU stays during an immediately preceding ACH stay (37 percent compared with 35 percent of for-profit LTCHs' cases). Another possible indicator of a sicker patient population is length of stay: The average Medicare-covered length of stay was one day longer in nonprofit LTCHs than in for-profit ones (27 days vs. 26 days). However, longer lengths of stay may also be due to inefficient care. Other indicators of patient mix suggest fewer differences between the two types of facilities. The average case mix in both nonprofit and for-profit LTCHs was similar. Nonprofit and for-profit LTCHs had similar shares of patients admitted without an immediately preceding ACH stay (11.5 percent vs. 12.5 percent); these patients may be less severely ill.

TABLE 11–5 **LTCHs in the top quartile of Medicare margins in 2012 had lower costs**

Characteristics	High-margin quartile	Low-margin quartile
Mean margin	20.5%	–13.0%
Mean total discharges (all payers)	510	409
Medicare patient share	71%	64%
Average length of stay (in days)	26	27
Mean CMI	1.13	1.05
Occupancy rate	76%	56%
Mean per discharge:		
Standardized costs	$28,356	$38,743
Standard Medicare payment*	38,094	34,626
High-cost outlier payments	1,311	4,980
Share of:		
Cases that are SSOs	25%	30%
Medicare cases from primary-referring ACH	38	41
LTCHs that are for profit	91	66

Note: LTCH (long-term care hospital), CMI (case-mix index), SSO (short-stay outlier), ACH (acute care hospital). Includes only established LTCHs—those that filed valid cost reports in both 2011 and 2012. Top margin quartile LTCHs were in the top 25 percent of the distribution of Medicare margins. Bottom margin quartile LTCHs were in the bottom 25 percent of the distribution of Medicare margins. Standardized costs have been adjusted for differences in case mix and area wages. Case-mix indexes have been adjusted for differences in short-stay outliers across facilities. The primary referring ACH is the acute care hospital from which the LTCH receives a plurality of its patients. Government providers were excluded.
*Excludes outlier payments.

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

High-margin LTCHs had lower unit costs

Higher unit costs were the primary driver of differences in financial performance between LTCHs with the lowest and highest Medicare margins (those in the bottom and top 25th percentiles of Medicare margins) (Table 11-5).[18] After accounting for differences in case mix and local market input price levels, low-margin LTCHs had standardized costs per discharge that were 37 percent higher than high-margin LTCHs ($38,743 vs. $28,356). Low-margin LTCHs may have benefited less from economies of scale. Compared with their high-margin counterparts, low-margin LTCHs had fewer cases overall (an average of 409 compared with 510 for high-margin LTCHs) and lower occupancy rates (56 percent vs. 76 percent). Notably, high-margin LTCHs had a higher average Medicare share of discharges than did low-margin LTCHs (71 percent vs. 64 percent), which suggests that Medicare patients are desirable.

Although the total Medicare payment per discharge was similar for low-margin and high-margin LTCHs, outlier payments made up a larger share of total payments to low-margin LTCHs. High-cost outlier payments per discharge for low-margin LTCHs were almost four times those of high-margin LTCHs ($4,980 vs. $1,311). When these outlier payments were removed from total payments, we found that the standard payment per discharge for low-margin LTCHs was 9 percent lower than that for high-margin LTCHs ($34,626 vs. $38,094). This difference was in part because they had a lower average case mix (1.05 vs. 1.13 for high-margin LTCHs) and in part because they cared for a disproportionate share of short-stay outlier cases, which often are paid at reduced rates. Such cases made up 30 percent of low-margin LTCHs' cases, compared with 25 percent in high-margin LTCHs.

How should Medicare payments change in 2015?

To estimate 2014 payments, costs, and margins with 2012 data, the Commission considered policy changes effective in 2013 and 2014. Those that affect our estimate of the 2014 Medicare margin include:

- a market basket increase of 2.6 percent for 2013, offset by required Patient Protection and Affordable Care Act of 2010 (PPACA) reductions totaling 0.8 percent, for a net update of 1.8 percent;
- a market basket increase of 2.5 percent for 2014, offset by required PPACA reductions totaling 0.8 percent, for a net update of 1.7 percent;
- budget-neutrality adjustments in 2013 and 2014 to account for CMS's underestimate of LTCH spending in the first year of the PPS. These adjustments, intended to bring total spending more in line with what would have been spent under the previous payment method, will decrease payments by about 3.75 percent over three years; and
- changes to the short-stay outlier policy in 2013, which will decrease payments.

We did not consider policy changes mandated by the Pathway for SGR Reform Act of 2013 because they will not begin to be implemented until fiscal year 2016.

We estimate that LTCHs' aggregate Medicare margin will be 6.5 percent in 2014. The Secretary has the discretion to update payments for LTCHs; there is no congressionally mandated update. We expect cost growth to be slightly higher than payment growth, though still below market basket level. The 6.5 percent margin also does not factor in the effect of the sequester, which is currently reducing Medicare program payments to LTCHs by about 2 percent. Therefore, if the sequester remains in place, margins would be expected to be about 2 percentage points lower.

On the basis of our review of payment adequacy for LTCHs, the Commission recommends that the Secretary eliminate the update to the LTCH payment rate. If the Congress does not implement the Commission's recommendation for LTCH payment reform (discussed later in this chapter), our update recommendation applies to Medicare's payment rate for all services furnished in LTCHs in fiscal year 2015. If the Congress does implement the Commission's recommended LTCH payment reform, our update recommendation applies to Medicare's payment rate for CCI cases in LTCHs, as described below.

RECOMMENDATION 11

The Secretary should eliminate the update to the payment rates for long-term care hospitals for fiscal year 2015.

RATIONALE 11

In the last year of the congressional moratorium on new LTCHs and LTCH beds, supply of facilities and beds increased slightly. The number of LTCH cases increased somewhat more slowly than growth in the number of FFS beneficiaries. Notably, on a per FFS beneficiary basis, the decline in the number of LTCH cases was much smaller than that seen in the ACH and SNF settings. These trends suggest that access to LTCH care has been maintained. The limited quality trends we measure appear stable. The availability of capital to LTCHs reflects uncertainty about possible changes to Medicare's regulations governing LTCHs rather than current reimbursement rates. Medicare margins for 2012 were positive. These trends suggest that LTCHs are able to operate within current payment rates. Therefore, the 2015 LTCH base payment rate should be the same as the 2014 rate.

IMPLICATIONS 11

Spending

- Because CMS typically uses the market basket as a starting point for establishing updates to LTCH payments, this recommendation would decrease federal program spending by between $50 million and $250 million in one year and by less than $1 billion over five years.

Beneficiary and provider

- This recommendation is not expected to affect Medicare beneficiaries' access to care or providers' ability to furnish care.

Reforming the LTCH payment system

In addition to evaluating the level of LTCH payments, the Commission has been considering for some time whether Medicare is paying appropriately for services provided in LTCHs. As discussed earlier, LTCHs have positioned themselves as providers of hospital-level care for long-stay CCI patients—patients who typically have long, resource-intensive hospital stays often followed by post-acute care—but nationwide most CCI patients are cared for in ACHs, and most LTCH patients are not CCI. Medicare's payments to LTCHs are higher than those made for similar patients in other settings. Comparatively attractive payment rates for LTCH care have resulted in an oversupply of LTCHs in some areas and have generated unwarranted use of LTCH services by patients who are not CCI. This situation may be advantageous for providers, but it is costly to the Medicare program and may encourage unnecessary transitions between care settings, which are detrimental to patients.

Problems with the current payment system

Although growth in spending on LTCH care has slowed in recent years, the Commission remains concerned about the accuracy of Medicare's payments for these services. Questions have been raised about whether payments are properly aligned with the resource needs of patients and whether Medicare pays more for LTCH patients than for similar patients in other settings. In considering these questions, policy analysts must also consider whether LTCHs achieve better outcomes that might justify higher payments.

Medicare's payments for LTCH services are not aligned with the resource needs of patients

The Commission has long held that payments to providers should be properly aligned with the resource needs of beneficiaries (Medicare Payment Advisory Commission 2009). But Medicare's payments to LTCHs do not always reflect this principle. As discussed, inflated costs were used to set the initial LTCH PPS payment rates. CMS's efforts to slow the growth in LTCH spending through regulation have reduced payments but likely have not altered the underlying inaccuracies in payments across types of cases.[19] Further, the requirement that LTCHs maintain an average length of stay of more than 25 days likely continues to distort both patients' use of resources and the underlying cost of care. The short-stay outlier (SSO) policy also appears to encourage unnecessary resource use. SSO cases are subject to a payment adjustment that can reduce payment substantially below what would be paid for LTCH cases with longer stays. Our analysis of 2012 LTCH claims data provides strong evidence that LTCHs try to avoid the SSO payment adjustment by keeping patients until their lengths of stay reach the SSO threshold for the case type (see text box, pp. 268–269).

Medicare's payments for similar services differ across settings of care

Another important principle espoused by the Commission is that, subject to risk differentials, payment for the same services should be comparable regardless of where the services are provided. Such "site neutrality" helps to ensure that beneficiaries receive appropriate, high-quality care in the least costly setting consistent with their clinical conditions. Here, too, Medicare's payment policies continue to fall short. The types of patients treated in LTCHs are also treated in ACHs and some SNFs (Centers for Medicare & Medicaid Services 2013, Dalton et al. 2012a, Dalton et al. 2012b, Gage et al. 2011, Kahn et al. 2013, Kahn et al. 2010, Koenig et al. 2013, Medicare Payment Advisory Commission 2004). But Medicare's payments to LTCHs are higher than those made for similar patients in either of those settings (Gage et al. 2007). The effects of the disparities in Medicare's payments across settings are exacerbated because CCI patients can be unprofitable in ACHs and often are less profitable than other types of cases in SNFs (Centers for Medicare & Medicaid Services 2013, Gage et al. 2007, Medicare Payment Advisory Commission 2013). This disparity has resulted in a documented decline in the number of SNFs admitting medically complex patients.[20] For ACHs paid under the IPPS, the high cost of caring for CCI patients relative to other patients in the same MS–DRG likely influences providers' decisions about service delivery, transfer, and discharge, and thus may result in inappropriate care, unnecessary use of services, and program overpayments. Comparatively attractive payment rates for LTCH care have resulted in an oversupply of facilities in some areas and may generate unwarranted use of LTCH services by patients who are not CCI. Meanwhile, as discussed earlier in this chapter, certificate-of-need laws have limited the growth of LTCHs in several states. While these restrictions have no doubt had some dampening effect on growth in Medicare spending for LTCH care, they have also helped to create inequities across ACHs in the relative profitability of CCI cases. In areas with LTCHs, ACHs may be able to reduce the costs of caring for CCI patients by transferring them earlier in the course of illness.[21] In areas without LTCHs, ACHs may have to keep CCI patients longer—and therefore accrue additional costs—until they are stable enough to be discharged to a lower level of post-acute care.

LTCH use often increases Medicare spending without improving beneficiary outcomes

After a decade of research, it remains unclear what Medicare is purchasing with its higher LTCH payments (see text box, pp. 282–283). Paying more for LTCH care might be justified if such care produced better outcomes for beneficiaries. But studies comparing LTCH care with that provided in ACHs have failed to find a clear advantage for LTCH users. Alternatively, paying more for LTCH care might be a good investment for the Medicare program if LTCH use reduced Medicare spending for other services. But, as discussed in the text box (pp. 282–283), some studies have found that, on average, episode payments are higher for beneficiaries who use LTCHs. In addition, some studies have found that per episode spending may be the same or lower for the most medically complex patients who use LTCHs but not for those who are less severely ill.

Defining CCI cases

As early as 2004, the Commission recommended that the Congress and the Secretary of Health and Human Services develop facility and patient criteria to ensure that LTCHs serve only the most medically complex patients. But a key issue in reforming the LTCH payment system is determining how to define the CCI. Clinicians have described CCI patients as exhibiting metabolic, endocrine, physiologic, and immunologic abnormalities that result in profound debilitation and often ongoing respiratory failure (Nierman and Nelson 2002). Such abnormalities and debilities in hospital patients are not readily identifiable using available

administrative data. However, the research literature is consistent in describing such patients as having long ACH stays with heavy use of intensive care services (Carson et al. 2008, Donahoe 2012, Macintyre 2012, Nelson et al. 2010, Wiencek and Winkelman 2010, Zilberberg et al. 2012, Zilberberg et al. 2008). (For Medicare's definition of an ICU, see text box, p. 284.)

In site visits and technical expert panel discussions conducted by Kennell and Associates, Inc. and RTI under contract with CMS, LTCH representatives and ACH critical care physicians agreed that medically stable post-ICU patients are appropriate candidates for LTCH care, although these patients are often treated in ACH "step-down" units (Centers for Medicare & Medicaid Services 2013, Dalton et al. 2012b). As described by Dalton and colleagues in a study conducted for CMS, such patients account for one-third to one-half of LTCH patients (Dalton et al. 2012a). Among these cases are ventilator-dependent patients with major comorbidities, patients who have had multiple organ failures, and patients with septicemia and other complex infections. Some have severe surgery- or trauma-related wounds. Notably, these patients are heavy users of ICU and cardiac care unit services during their preceding ACH stays. Often, such patients are transferred directly from ICUs to the LTCH. Dalton and colleagues found that these patients generally require ongoing nursing care at nurse-to-patient staffing levels from 1:1 to 1:4, as well as nutritional and rehabilitation services (to address the deconditioning that accompanies long-term critical illness) and access to multiple physician-specialist consulting services (Dalton et al. 2012a).

LTCHs care for other, less acutely ill patients as well. These patients may require lengthy hospitalizations and subsequent post-acute care, but they do not have (or no longer have) intensive nursing care needs (Centers for Medicare & Medicaid Services 2013). Research has consistently shown that caring for these lower acuity patients in LTCHs increases Medicare expenditures without demonstrable improvements in quality of care or outcomes, yet such patients make up a majority of cases in most LTCHs.

Analysis of findings from the Post-Acute Care Payment Reform Demonstration, which tested the use of a standardized patient assessment tool in various post-acute care settings, revealed meaningful differences in the intensity of nursing care and nutritional, rehabilitation, and physician services across LTCH patients, differences that could be used to define CCI cases in LTCHs. One striking finding was that length of time in an ICU during an immediately preceding ACH stay was by far the most important factor in explaining variation in routine (nontherapy) resource intensity in the LTCH setting (Gage et al. 2011).[22] Length of stay in the ICU was significantly associated with post-acute care case complexity, although the impact of the variable diminished as the ICU stay got longer (Gage et al. 2011). Further, the length of the ICU stay was noted as a distinguishing characteristic of patients who used LTCHs as opposed to patients who used only SNFs, inpatient rehabilitation facilities (IRFs), or home health care. Post-acute care episodes that had preceding ACH ICU stays of seven days or more were found only among LTCH users (Gage et al. 2011).

Length of stay in the ICU thus appears to be predictive of intensive resource use during post-acute care episodes that begin with an ACH stay. The Commission maintains that this variable can be used to capture the vast majority of CCI patients who may be appropriate candidates for LTCH care and who have resource needs that are likely to be aligned with the standard LTCH payments. This information is collected in the medical record and reported to CMS on the claim and therefore is available to both the Medicare program and LTCH providers to determine whether patients are appropriate for admission.

To identify CCI patients who will be eligible for standard payments in the LTCH, it is necessary to specify the required number of days in the ICU. As noted above, ICU days are positively associated with case complexity. As the ICU length of stay threshold is reduced, the complexity and resource needs of the patient decrease. If the threshold is set too low, less-complex cases would be designated as CCI and CMS would continue to pay too much for many cases that could be cared for appropriately in other settings at a lower cost to the Medicare program.

The Pathway for SGR Reform Act of 2013 mandated changes to the LTCH PPS, including limiting standard LTCH payments to cases that spent at least three days in an ICU during an immediately preceding ACH stay (see text box, p. 285). Our analysis of IPPS claims data from 2012 found that 22.8 percent of IPPS discharges spent three or more days in an ICU (Figure 11-6, p. 283). The Commission is concerned that this threshold is too low to distinguish the truly CCI patient.

The Commission maintains that CCI cases are a small share of Medicare ACH cases; the ICU length of stay threshold identifying CCI cases should be set accordingly. The Commission therefore recommends that the Congress limit standard LTCH payments to cases that spent eight or more days in an ICU during an immediately preceding

Do long-term care hospital outcomes justify higher payments?

Paying more for long-term care hospital (LTCH) care might be justified if it produced better outcomes for beneficiaries. However, until recently, LTCHs have not been required to submit quality data to CMS; those data are not yet available for analysis. Further, Medicare collects no clinical assessment data for acute care hospital (ACH) patients and very limited assessment data for LTCH patients, so comparisons of outcomes have generally been limited to mortality and readmissions.

A decade of research comparing readmission and mortality rates for LTCHs with those of ACHs has failed to find a clear advantage for LTCH users. Regarding readmissions, several studies have found lower rates of readmission among some LTCH users. For example, previous Commission analysis of 2001 claims found lower readmission rates for the most medically complex beneficiaries who used LTCHs compared with similar patients who did not have an LTCH stay (Medicare Payment Advisory Commission 2004). CMS's Post-Acute Care Payment Reform Demonstration compared beneficiaries using LTCHs with those using skilled nursing facilities and inpatient rehabilitation facilities and found that, after controlling for differences in case mix, LTCH patients had a lower risk of ACH readmission within 30 days of discharge from the ACH (Gage et al. 2011). Another recent study, sponsored by the National Association of Long Term Hospitals (NALTH), found that Medicare beneficiaries who used LTCHs had lower rates of readmission to the ACH in 17 of 24 major conditions compared with beneficiaries who did not use LTCHs (Koenig et al. 2013). That LTCH patients would have lower readmission rates is not unexpected since most LTCHs provide a higher level of care than do most other post-acute care providers. However, in a related study using data from the CMS demonstration, researchers found that LTCH cases were more likely than other post-acute care cases to be readmitted to an ACH on day 30 and beyond (Morley et al. 2011).

Regarding mortality, the Commission's analysis of 2001 claims found no clear benefit for beneficiaries who use LTCHs (Medicare Payment Advisory Commission 2004). But another study, conducted by RTI International under a CMS contract, found that for the most complex ventilator patients in Texas, Louisiana, and Oklahoma (three states with a history of high LTCH use), mortality was lower for those who used an LTCH (Kennell and Associates Inc. 2010). This study (which used 2004 claims data from the three states to construct episodes of care for beneficiaries assigned to ventilator-related diagnosis related groups during initial ACH admissions and compared outcomes for beneficiaries who went on to use LTCHs with those who did not) also found that the most complex ventilator patients who used LTCHs were more likely to be discharged home than similar patients who did not use LTCHs. But for the least complex ventilator cases, the researchers found that outcomes were worse for beneficiaries who used LTCHs. In yet another study, Kahn and colleagues examined claims data from 2002 through 2006 for beneficiaries who required mechanical ventilation and spent at least 14 days in an ACH intensive care unit (ICU) and found no differences in mortality one year after discharge for beneficiaries who were subsequently transferred to an LTCH compared with those who were not (Kahn et al. 2013). NALTH's 2013 study also found no difference in one-year survival rates for ventilator patients who used LTCHs (Koenig et al. 2013). However, the NALTH study did find lower rates of mortality one year after discharge for LTCH patients in 9 of the 24 major conditions studied (Koenig et al. 2013).

Paying more for LTCH care also might be a good investment for the Medicare program if LTCH use reduced Medicare spending for other services. In its analysis of data from 2001, the Commission found that Medicare pays more for episodes that include LTCH care but that the payment differences were not statistically significant when LTCH care was targeted at the most severely ill patients (Medicare Payment Advisory Commission 2004). The CMS-sponsored RTI International analysis of 2004 claims data from three states with high LTCH use found that for the most complex ventilator patients, Medicare payments

(continued next page)

Do long-term care hospital outcomes justify higher payments? (cont.)

for the episode of care were the same or lower for those who used an LTCH than for those who did not. However, for the least complex ventilator patients, Medicare payments were considerably higher for the beneficiaries who used LTCHs than for those who did not (Kennell and Associates Inc. 2010). By contrast, Kahn and colleagues found that, for beneficiaries requiring mechanical ventilation who spent at least 14 days in an ACH ICU between 2002 and 2006, transfer to an LTCH was associated with lower total provider costs but higher total Medicare payments (Kahn et al. 2013). The recent study sponsored by NALTH found lower total episode payments for LTCH users for only 4 of the 24 conditions studied (circulatory, digestive, nervous system, and injuries/poisoning/toxic effect of drugs), representing about 20 percent of LTCH patients (Koenig et al. 2013).

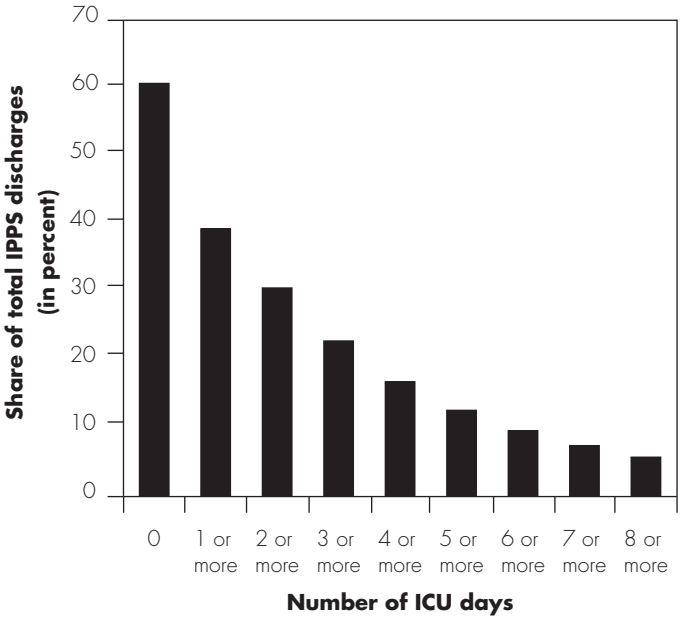
Yet another recent study by RTI for CMS looked at 2007 claims nationwide and identified 74 ACH diagnosis groups for which LTCH referral is most common (Kandilov and Dalton 2011). The researchers created episodes of care for beneficiaries admitted to the ACH with those diagnoses and compared Medicare payments for episodes that included LTCH care with those that did not. This analysis found that both Medicare payments and provider costs were higher for episodes that included LTCH stays, even for ventilator patients, although the difference in payment was smallest for this group.[24] ■

ACH stay. Our analysis of IPPS claims data found that cases with eight or more days in an ICU accounted for 5.7 percent of all Medicare discharges in 2012 (Figure 11-6). IPPS cases that had eight or more days in an ICU were concentrated in a small number of MS–DRGs: 23 MS–DRGs accounted for half of the cases. Of these, seven were respiratory MS–DRGs involving mechanical ventilation, major complications and comorbidities, or both; three were severe infections with mechanical ventilation or major complications and comorbidities; and five were major surgical procedures (such as thoracic aortic aneurysm repair or major bowel procedures) with major complications and comorbidities. These conditions correspond with the "ideal" LTCH patients described by the LTCH representatives and critical care clinicians interviewed during the CMS-sponsored site visits by Kennell/RTI (Dalton et al. 2012b).[23] These MS–DRGs also accounted for about half of the IPPS cases that went on to use LTCH services in 2010. Such severely ill patients should be among those who have been found in previous studies to be more likely to benefit from LTCH care (see text box, this page).

Setting the ICU length of stay threshold for CCI cases at eight days captures a large share of LTCH cases requiring prolonged mechanical ventilation—a service specialty of many LTCHs. However, the Commission is concerned that LTCH care may be appropriate for some patients requiring mechanical ventilation even if they did not spend eight or more days in an ICU during an immediately preceding ACH stay. The Commission's analysis of 2012 LTCH claims found that about 22,000 cases (15.8 percent of all LTCH discharges) received prolonged mechanical ventilation services during the LTCH stay. Of these cases, 69.7 percent had an immediately preceding ACH stay that

FIGURE 11–6

Almost 6 percent of IPPS discharges had ICU stays of 8 or more days in 2012



Note: IPPS (inpatient prospective payment system), ICU (intensive care unit). The IPPS is Medicare's payment system for acute care hospitals. ICU days include coronary care unit days.

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

What is an intensive care unit?

Intensive care units (ICUs) are staffed and supplied to provide care to critically ill patients. Medicare's conditions of participation do not require hospitals to have ICUs, nor do they specify required attributes of ICUs in hospitals that have them. However, Medicare requires both acute care hospitals and long-term care hospitals to submit cost reports that apportion each hospital's total allowable costs between Medicare beneficiaries and other patients, with separate average per diem costs calculated for general routine patient care and intensive or coronary unit care. To properly identify ICU costs, Medicare regulations stipulate that ICUs must:

- provide care to critically ill patients, and may include trauma units, coronary care units, pulmonary care units, and burn units;[25]
- be physically and identifiably separate from general routine patient care areas, including subintensive or intermediate care units and ancillary service areas;
- have a nursing staff separate from other units or areas providing different levels or types of care;[26]
- have specific written policies that include criteria for admission to and discharge from the unit;
- have registered nurses available on a continuous 24-hour basis with at least one registered nurse present in the unit at all times;
- maintain a minimum nurse–patient ratio of one nurse to two patients per patient day;[27] and
- be equipped with or have available for immediate use life-saving equipment necessary to treat critically ill patients, such as respiratory and cardiac monitoring equipment, respirators, cardiac defibrillators, and wall or canister oxygen and compressed air. ■

included eight or more days in an ICU, while 15.6 percent had an ACH stay with fewer than eight days in an ICU. (An additional 14.7 percent did not have an ACH stay within three days of admission to the LTCH.) To ensure that patients requiring prolonged mechanical ventilation have appropriate access to specialty weaning services offered by many LTCHs, Medicare should allow an exception to the eight-day ICU threshold for LTCH cases that receive mechanical ventilation for 96 hours or more during an immediately preceding ACH stay. The Commission's analysis of IPPS claims for patients who were discharged alive from ACHs in 2012 found that about 103,000 cases (1.1 percent of all live IPPS discharges) received prolonged mechanical ventilation services during their ACH stay. Of these cases, 81,600 (79 percent) would have met the CCI criterion because they spent eight or more days in an ACH ICU. The exception to the eight-day ICU threshold for cases that received prolonged mechanical ventilation in the ACH would thus have increased the potential pool of CCI-eligible cases in 2012 by 21,000 nationwide.

Designing a revised LTCH PPS

The Commission's approach is based on the premise that the most medically complex patients have always been a small share of the total population of hospital inpatients. Although hospital case mix has increased over time, the explosive growth in the number of LTCHs that followed implementation of the IPPS was not driven by a need for these services but rather by payment policies that created opportunities for financial gain.

The Commission's recommendation for long-term care hospital (LTCH) payment reform includes the stipulation that savings be used to improve payment for chronically critically ill (CCI) cases paid under the inpatient prospective payment system (IPPS) for acute care hospitals. Therefore, the recommendation for LTCH payment reform is included with the Commission's acute care hospital update recommendation for 2015. The recommendation text related to LTCHs is:

The Congress should direct the Secretary of Health and Human Services to set LTCH base payment rates for non-CCI cases equal to those of acute care hospitals, and redistribute the savings to create additional inpatient outlier payments for CCI cases in IPPS hospitals. The change should be phased in over a three-year period from 2015 to 2017.

The Pathway for SGR Reform Act of 2013 mandates changes to the long-term care hospital prospective payment system

The Pathway for SGR Reform Act of 2013 included several provisions related to long-term care hospitals (LTCHs), including changes to payment rates for some cases, changes to the 25-percent rule, and a new moratorium on LTCHs.

"Site-neutral" payments

The Pathway for SGR Reform Act of 2013 establishes "site-neutral" payments for specified cases in LTCHs, beginning in fiscal year 2016. Under the law, LTCH payment rates will be allowed only for LTCH discharges that had an immediately preceding acute care hospital stay (ACH) and:

- the ACH stay included at least three days in an intensive care unit, or
- the discharge receives an LTCH principal diagnosis indicating the receipt of mechanical ventilation services for at least 96 hours.

All other LTCH discharges—including any discharges assigned to psychiatric or rehabilitation Medicare severity long-term care diagnosis related groups, regardless of intensive care unit use—will be paid an amount based on Medicare's ACH payment rates under the inpatient prospective payment system or 100 percent of the costs of the case, whichever is lower. These site-neutral payments will be phased in, with payments in fiscal years 2016 and 2017 a blend of one-half the standard LTCH payment rate and one-half the site-neutral rate.

New criteria for LTCHs

Currently, to qualify as an LTCH for Medicare payment, a facility must meet Medicare's hospital conditions of participation and its Medicare patients must have an average length of stay greater than 25 days. Under the Pathway for SGR Reform Act of 2013, beginning in fiscal year 2016, the LTCH average length of stay will be calculated only for Medicare fee-for-service cases that are not paid site-neutral rates. Medicare Advantage patients will be excluded from the average length of stay calculation. In addition, beginning in fiscal year 2020, to continue to receive LTCH payments for eligible cases, an LTCH must have no more than 50 percent of its cases paid at the site-neutral rate.

The 25-percent rule

The Pathway for SGR Reform Act of 2013 rolls back the 25-percent rule for most hospitals-within-hospitals (HWHs) and satellites to 50 percent until October 1, 2016. Most HWHs and satellites will thus be paid standard LTCH rates for eligible patients admitted from their host hospitals as long as the percentage of Medicare admissions from the host hospital does not exceed 50 percent. In addition, the Secretary is prohibited from applying the 25-percent rule to freestanding LTCHs before cost-reporting periods beginning on July 1, 2016. The law requires the Secretary to submit a report to the Congress on the necessity of a 25-percent rule by October 1, 2015.

Moratorium on new LTCHs

Beginning January 1, 2015, the Pathway for SGR Reform Act of 2013 imposes a moratorium on new facilities and new beds in existing facilities. The moratorium expires on September 30, 2017. No exceptions are allowed. ■

Based on the evidence outlined earlier, the Commission has concluded that Medicare pays too much for some patients in LTCHs. The Commission therefore seeks to improve the accuracy of Medicare's payments for LTCH services. The Commission focuses on how to use available data to identify the CCI patients who require costly extended hospital-level care and how to direct LTCH payment rates to those patients while paying more appropriately for patients who are less severely ill.

To reduce incentives for LTCHs to admit lower acuity patients—who could be appropriately cared for in other settings at a lower cost to Medicare—the Commission recommends that standard LTCH payment rates be paid

only for LTCH patients who meet the CCI profile at the point of transfer from an ACH. Such cases should be those that (a) spent eight or more days in an ICU during the IPPS stay or (b) received mechanical ventilation for 96 hours or more during the IPPS stay. Medicare would pay for all other cases admitted to LTCHs using IPPS-based rates. As discussed in this report's Chapter 3, this recommendation is part of a package of recommended changes to hospital payments that is designed to improve financial incentives in these payment systems while maintaining adequate overall payments.

Setting payment rates for LTCH services

Under this revised LTCH PPS, CMS would calculate a CCI base payment and new relative weights for each MS–LTC–DRG based solely on the most recent available standardized costs associated with the CCI cases in each DRG. This change would be budget neutral—aggregate LTCH payments for CCI cases would be held to the same aggregate payments these cases receive currently. Other LTCH cases that are not CCI would receive IPPS-based payment rates.

The LTCH PPS would continue to make additional payments for CCI and non-CCI cases that qualify as high-cost outliers. Total outlier payments in the LTCH PPS would continue to account for 8 percent of total LTCH PPS payments for CCI and non-CCI cases, with a uniform national fixed loss amount applied to both CCI and non-CCI cases. As discussed in this report's hospital chapter (Chapter 3), the Commission recommends that the savings from this reform be added to the outlier pool in the IPPS and used to make higher outlier payments for the costliest CCI cases in ACHs. Together, these actions would help improve parity between the LTCH and ACH settings in Medicare's payments for CCI cases and non-CCI cases.

CMS should continue to apply a payment adjustment for CCI cases with unusually short stays. However, as discussed in the text box (pp. 268–269), CMS should change the methodology used to calculate the payment for short-stay outlier CCI cases to discourage provider gaming. The current payment method for SSOs generates a payment "cliff" that creates incentives for providers to lengthen patient stays, thereby avoiding the SSO penalty.

Removing non-CCI cases from the calculation of LTCHs' average length of stay

To qualify as an LTCH under current law, a facility must meet Medicare's conditions of participation for ACHs and its Medicare patients must have an average length of stay greater than 25 days. Maintaining a minimum average length of stay for CCI cases is necessary to help ensure that Medicare is paying standard LTCH rates only for the most severely ill cases and to help guard against providers unbundling care by transferring CCI cases to a lower level of post-acute care. However, in concert with the payment changes outlined above, the Congress should change the law to require an average length of stay of greater than 25 days only for Medicare CCI cases. Freed from the length of stay requirement for non-CCI cases, LTCHs could continue to admit non-CCI cases that could benefit from LTCH services but would be free to alter their practice patterns as appropriate to better meet patients' clinical needs.

Improving payment accuracy using a patient assessment tool

As noted above, LTCHs currently submit very limited patient assessment data for quality reporting purposes. The relative lack of information about LTCH patients' resource requirements continues to undermine our ability to evaluate patients' service needs and use of resources and to compare those characteristics with patients in other post-acute care settings. As a result, we do not know whether there is selection across settings in the patients admitted. Furthermore, without comparable information, we cannot systematically evaluate the cost and outcomes of the care beneficiaries receive across settings. As discussed in Chapter 7, the Commission recommends that the Secretary implement a common assessment tool for LTCHs, home health agencies, SNFs, and IRFs by 2016.

Implementing a revised LTCH PPS

The Commission recommends that the new LTCH payment policies described above be implemented over a three-year period. In the first year of the transition, the new base payment rates and weights for CCI cases should be implemented in full. For non-CCI cases, the base payment rate should be a blend of two-thirds of the base payments that otherwise would have been made under current policy plus one-third of the IPPS-based rate described above. A revised short-stay outlier policy also should be fully implemented for both CCI and non-CCI cases in the first year. In the second year of the transition, payments for non-CCI cases should be a blend of one-third of the base payments that otherwise would have been made under current policy and two-thirds of the IPPS-based rate. In the third year, non-CCI cases would be paid the full IPPS-based rate. During (and after) the transition, the pool of funds available for making high-cost outlier payments would continue to account for 8 percent of total projected

LTCH payments. The size of the pool would change as the (blended) rates for non-CCI cases declined. The national fixed loss amount should change accordingly.

Improving payments for CCI cases in IPPS hospitals

As discussed in this report's Chapter 3, the Commission recommends that the Congress use the savings achieved from improving the accuracy of LTCH payments to improve the accuracy of payments for CCI cases in ACHs paid under the IPPS. The savings would be allocated to the IPPS outlier pool to finance higher outlier payments for the highest cost IPPS CCI cases. For example, outlier payments for IPPS CCI cases could be calculated using a lower fixed loss amount, and Medicare could pay a higher percentage (e.g., 90 percent) of hospitals' costs above the CCI outlier threshold. The outlier policy for non-CCI cases in IPPS hospitals would remain unchanged.

Evaluating the impact of a revised LTCH PPS and preventing undesirable responses

Revising the current LTCH PPS will improve the accuracy of Medicare's payments to LTCHs by removing certain policies that likely lead to distortions in the cost of care. Payments to LTCHs for non-CCI cases will be reduced, but because LTCHs will no longer be required to maintain an average length of stay of more than 25 days for non-CCI cases, providers will be able to restructure their patterns of care to reflect patient needs rather than payment policy.

The Commission's recommendations will also help improve payment parity across care settings. Medicare would pay higher rates only for the most severely ill cases in LTCHs and would reduce its rates in line with IPPS payments for less severely ill patients. LTCHs' average standard payment per discharge for CCI patients would remain at roughly $50,000, while the average standard payment per discharge for non-CCI patients would fall from about $40,000 to $12,000 (the average IPPS standard payment for the same case types; additional LTCH outlier payments would be made as applicable). This change would reduce incentives for LTCHs to admit cases that are not CCI, thereby reducing opportunities for unbundling of IPPS payments in areas that have LTCHs. In areas without LTCHs, ACHs that have to keep CCI patients longer—and therefore accrue additional costs—may be able to recoup some of those costs through higher IPPS outlier payments. Better alignment of payments and costs should weaken previous incentives to increase the number of LTCH beds and facilities and reduce unnecessary use of expensive LTCH care.

The Commission's analysis of LTCH claims data from 2012 found that 36 percent of LTCH cases had immediately preceding ACH stays that included eight or more days in an ICU and therefore met MedPAC's recommended definition of CCI. CCI shares varied across types of LTCHs (Figure 11-7, p. 288). Notably, LTCHs located in areas of high LTCH saturation had a mean CCI share more than 40 percent lower than that of LTCHs located in other areas (22.5 percent vs. 38.9 percent).

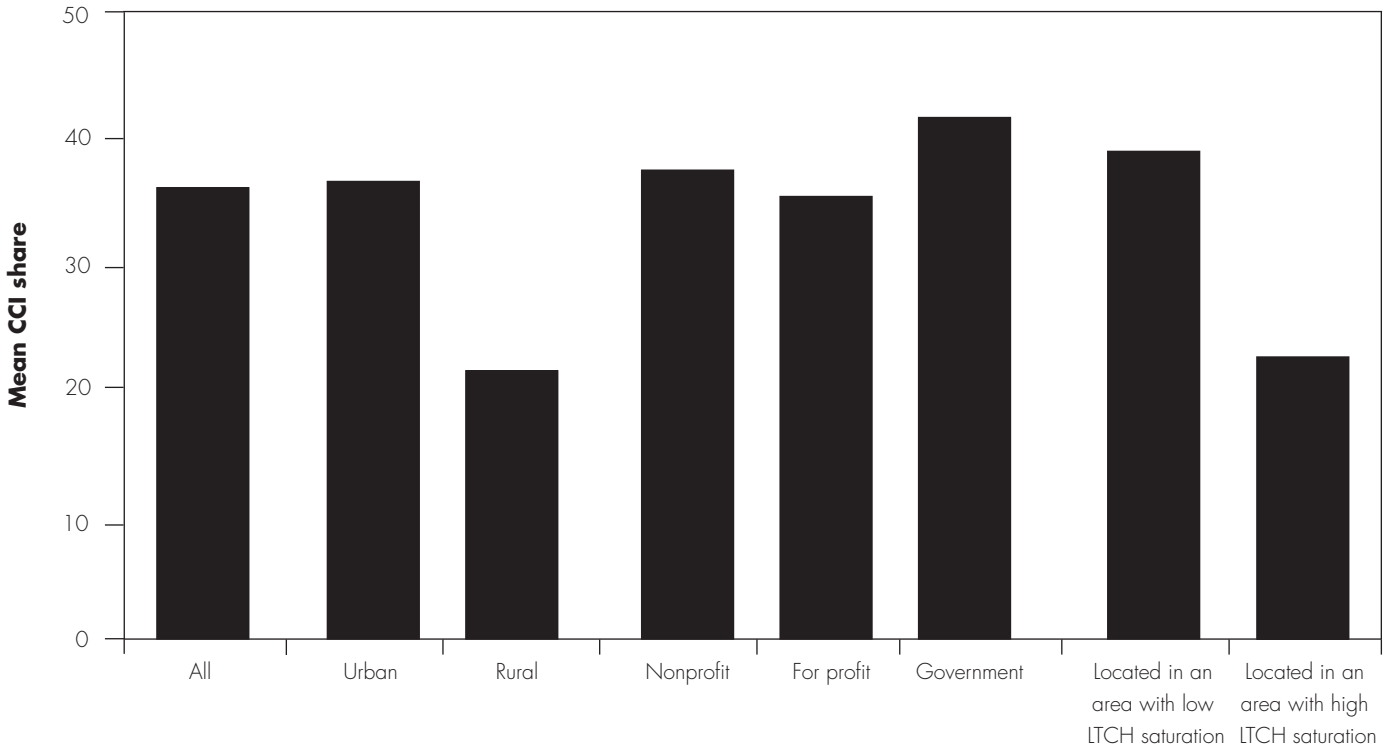
An additional 5 percent of LTCH cases in 2012 would have been eligible for the higher CCI payment rate because they had used prolonged mechanical ventilation services during an immediately preceding ACH stay even though they did not have eight or more days in an ICU. Thus, if the Commission's recommended payment reforms were implemented, aggregate payments for about 41 percent of LTCH cases would remain unchanged. The remaining 59 percent of LTCH cases would be paid for using IPPS-based rates.

Without behavioral changes, total payments for virtually all LTCHs would decline substantially. The Commission estimates that, when the recommended payment changes are fully implemented, aggregate payments to LTCHs would decline by about $2 billion (Table 11-6, p. 289). On average, assuming no behavioral change, an LTCH's total Medicare payments would decline by 36.5 percent by year three of the transition. LTCHs with higher shares of non-CCI cases would be disproportionately affected. The Commission estimates that payments would fall more than average for for-profit LTCHs and LTCHs in LTCH-saturated markets. Savings from MedPAC's recommendation would be used to increase outlier payments for CCI cases in ACHs, increasing aggregate outlier payments under the IPPS by $2 billion. About 6 percent of IPPS discharges would meet the definition of CCI and be eligible for higher outlier payments. Medicare payments for these cases would increase, on average, 10.8 percent. On average, an IPPS hospital's total Medicare payments would increase by 1.8 percent. Large urban hospitals, major teaching hospitals, low-margin hospitals, and hospitals in areas with no LTCHs would benefit more from the Commission's recommendation.

The Commission anticipates substantial changes in behavior that should significantly lower LTCHs' costs for non-CCI cases and therefore will reduce the impact

FIGURE 11–7

Mean CCI share differed by type of LTCH, 2012



Note: CCI (chronically critically ill), LTCH (long-term care hospital). CCI cases are those that had eight or more days in an intensive care or coronary care unit during an immediately preceding acute care hospital stay. The CCI share is the percent of total Medicare cases that met the definition of CCI. Areas with high LTCH saturation had more than 2 LTCH beds per 1,000 Medicare beneficiaries, while areas with low LTCH saturation had 2 or fewer LTCH beds per 1,000 Medicare beneficiaries.

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

on LTCHs' profits. The LTCH industry has repeatedly demonstrated its responsiveness to payment policy changes, and the Commission expects the response to LTCH payment reform to be swift and dramatic. Such change is expected and desired. Under the Commission's recommended policy changes, LTCHs will face incentives to admit fewer non-CCI cases and to be more selective in choosing which non-CCI cases they do admit. LTCHs also will likely alter their delivery of care—such as by reducing lengths of stay—to reduce the costs of care. As shown in the hypothetical example in Table 11-7, in the first year of the transition to the new policy, an LTCH could reduce the length of stay for a non-CCI case by five days and still maintain a positive margin under the IPPS-based payment rate. LTCHs could reduce lengths of stay in a number of ways. They could admit non-CCI cases later in their course of illness, after they have spent a few more days in the acute care hospital. In addition, they could discharge non-CCI cases earlier to lower levels of care.

The Commission's analysis of LTCH margins suggests that LTCHs do not systematically make their margins on their less complex, non-CCI cases. There is no relationship between an LTCH's margin and its CCI share of cases (Figure 11-8, p. 290). Thus, LTCHs can focus on caring for CCI cases and still maintain positive margins. However, in areas with many LTCHs, some providers may find it more difficult to increase the share of CCI cases they admit. In these areas, provider consolidation may occur.

Other changes in provider behavior, however, may not be in the best interests of the Medicare program, its beneficiaries, or the taxpayers. As discussed later, it will be necessary to carefully monitor provider response to these payment reforms to safeguard against undesirable responses and outcomes. In addition, Medicare's 25-percent rule will need to continue. Finally, as LTCHs become more selective about the non-CCI cases they admit, to maintain access to care for beneficiaries it will

TABLE 11–6

Estimated impact of MedPAC's recommendation to reduce differences in payment rates for LTCHs and ACHs (fully implemented)

	LTCH PPS	IPPS
Total Medicare payments		
Aggregate change (in billions)	–$2.0	$2.1
Mean percent change	–36.5%	1.8%
Change in payments greatest for facilities that are:	• For profit • In areas with high LTCH saturation • Low CCI	• Large urban • Major teaching • Low margin • In areas with fewer LTCHs

Note: LTCH (long-term care hospital), ACH (acute care hospital), PPS (prospective payment system), IPPS (inpatient prospective payment system), CCI (chronically critically ill). The IPPS is Medicare's payment system for acute care hospitals. CCI cases are those that had eight or more days in an intensive care or coronary care unit during an immediately precending ACH stay. Areas with high LTCH saturation had more than 2 LTCH beds per 1,000 Medicare beneficiaries. Impacts assume no change in provider behavior.

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

become even more important for CMS to fix payment policies that presently create disincentives for SNFs to admit medically complex cases.

Monitoring changes in utilization, spending, and outcomes

Because payment for non-CCI cases would be sharply reduced, LTCHs might find that admitting these patients is not financially advantageous. To maintain an acceptable profit margin, LTCHs may seek to increase the number of CCI cases they admit. Policymakers should monitor changes in LTCH utilization, patient mix, spending, and outcomes to ensure that beneficiaries are receiving efficient, high-quality care. Policymakers should also monitor use of ICU services and prolonged mechanical ventilation services in the ACH. Under a revised IPPS outlier policy, ACHs might be tempted to extend patients' stays in the ICU or delay weaning from the ventilator to qualify for more generous outlier payments and thereby reduce their losses.

TABLE 11–7

The Commission's recommendation will create incentives for LTCHs to reduce lengths of stay for non-CCI cases

	Hypothetical LTCH non-CCI case	
	Current policy	First year of transition to new policy
Payment per case	$40,000	$30,360
Cost per day	$1,500	$1,500
Length of stay (in days)	25	20
Cost per case	$37,500	$30,000

Note: LTCH (long-term care hospital), CCI (chronically critically ill). Non-CCI cases are those that did not have an immediately preceding acute care hospital stay that included eight or more days in an intensive care or coronary care unit.

Continuing the 25-percent rule

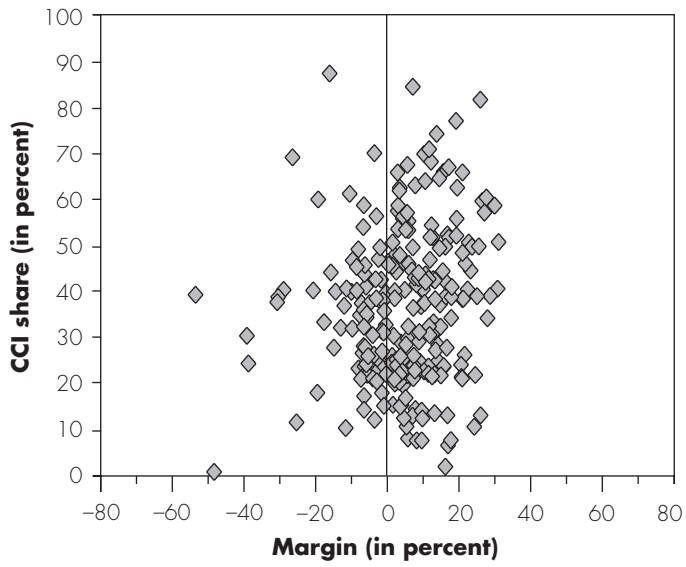
The 25-percent rule was designed to discourage inappropriate shifting of patients from ACHs to LTCHs (see text box, p. 267). In the absence of criteria for admission to an LTCH, the Commission has always viewed the 25-percent rule as a blunt but necessary instrument to help ensure that LTCHs do not function as units of ACHs. Under a revised LTCH payment system, incentives remain for ACHs to unbundle care—both for CCI and non-CCI cases—that is paid for under the IPPS. Therefore, the Commission recommends that CMS continue to apply the 25-percent rule.

Improving payments for medically complex cases in skilled nursing facilities

The payment reforms recommended by the Commission will reduce incentives for LTCHs to admit cases that are not CCI. Some cases currently cared for in LTCHs may be shifted to SNFs and other post-acute care settings.

FIGURE 11–8

Many LTCHs with high CCI shares have high margins



Note: LTCH (long-term care hospital), CCI (chronically critically ill). CCI cases are those that had an immediately preceding acute care hospital stay that included eight or more days in an intensive care or coronary care unit.

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

To facilitate this shift, it is important that the accuracy of Medicare's payments to SNFs for medically complex cases be improved.

The Commission has repeatedly recommended to the Congress and the Secretary that changes be made to the PPS for SNFs that would improve the accuracy of payments for medically complex cases (Medicare Payment Advisory Commission 2013, Medicare Payment Advisory Commission 2012b, Medicare Payment Advisory Commission 2008). As described in Chapter 8, the SNF PPS disadvantages SNFs that admit high shares of medically complex cases such as those with septicemia or pneumonia or those that need intensive respiratory services—the types of cases that have often been admitted to LTCHs. In fact, as noted above, growth in the use of LTCH services in some areas may have been spurred by a SNF PPS that encourages SNFs to admit patients needing rehabilitation services over those needing medically complex care.

Medicare's payment policies must be aligned so as to ensure that beneficiaries receive care in the lowest cost setting consistent with their clinical condition. Patients who are appropriate candidates for SNF care should be treated there and not in higher cost LTCHs. As revisions are made to the LTCH PPS to improve the accuracy of payments and reduce inappropriate incentives to admit non-CCI cases, similar reforms must be made to remove disincentives for SNFs to admit such cases. SNFs have proven adept at modifying their practices in response to changes in policy. The Commission reiterates its recommendation that these policy changes be made. ■

Endnotes

1 During the year, the LTCH is paid the LTCH rate for these cases. If the facility is found to have been overpaid during retrospective settlement at the end of the cost report year, CMS collects the overpayments from future payments.

2 Over the past decade, both the number and the share of critically ill patients transferred from ACHs to LTCHs have grown markedly. Kahn and colleagues found that, although the overall number of Medicare admissions to ACH ICUs fell 14 percent between 1997 and 2006, the number of Medicare patients discharged to LTCHs after ACH intensive care stays almost tripled during the period (Kahn et al. 2010).

3 The Medicare, Medicaid, and SCHIP Extension Act of 2007 also requires LTCHs to have a patient review process that screens patients to ensure appropriateness of admission and continued stay, physician on-site availability on a daily basis, and interdisciplinary treatment teams of health care professionals.

4 More information on the prospective payment system for LTCHs is available at http://medpac.gov/documents/MedPAC_Payment_Basics_13_LTCH.pdf.

5 Medicare pays LTCHs outlier payments for patients who are extraordinarily costly. High-cost outlier cases are identified by comparing their costs with a threshold that is the MS–LTC–DRG payment for the case plus a fixed loss amount ($13,314 in 2014). Medicare pays 80 percent of the LTCH's costs above the threshold. In fiscal year 2012, about 11 percent of LTCH cases received high-cost outlier payments. The prevalence of high-cost outlier cases differed by LTCH ownership. About 10 percent of cases in for-profit LTCHs were high-cost outliers, compared with 16 percent of cases in nonprofit LTCHs and 19 percent of cases in government-owned LTCHs. Historically, some case types have been far more likely to be high-cost outliers than others. For example, almost a quarter of cases assigned to MS–LTC–DRG 4 (tracheostomy with prolonged mechanical ventilation) typically receive high-cost outlier payments each year.

6 A geometric average is derived by multiplying all numbers in a set and raising the product to the exponent of one divided by the number of cases in the set. This statistic is useful for analyzing data that are highly skewed.

7 In a previous analysis, the Commission compared cases that would have been very short-stay outliers (VSSOs) in 2011 with cases that were not SSOs to get a better understanding of how very short stays differ from longer ones. Compared with cases that were not SSOs, VSSO cases were more likely to be of an extreme severity level and to require prolonged mechanical ventilation. Many LTCH VSSO cases were short because the beneficiary was readmitted to an ACH or died. Twenty-seven percent of VSSO cases were discharged to an ACH, while only 5 percent of longer stay cases were readmitted. Similarly, 41 percent of VSSO cases died in the LTCH compared with 6 percent of longer stays. Even when VSSO cases were discharged alive, only 27 percent were still living one year after discharge, compared with more than half of non-SSO cases (Medicare Payment Advisory Commission 2013).

8 RTI, under contract to CMS, reported a similar finding (Gage et al. 2007). RTI reviewed LTCH Medicare costs and payments for the two years before and two years after implementation of the LTCH PPS. Immediately after the PPS was implemented, LTCH margins were found to be much higher than margins in the 2001–2002 period under the prior payment system. RTI attributed higher overall LTCH margins to the fact that the initial base LTCH PPS rate was substantially overstated.

9 In its 2007 report to CMS, RTI found that LTCH margins were much higher than IPPS margins for the same DRGs. RTI found that ventilator and other respiratory-related LTCH DRGs were paid far in excess of expected costs and generated very high margins, whereas LTCH DRGs related to rehabilitation and wound care were paid at rates at or slightly above costs, generating margins that were closer to, although still slightly higher than, average IPPS margins.

10 Even in states without certificate-of-need requirements, new LTCHs have been more likely to open in markets where LTCHs already exist than in areas without LTCHs. Interviews conducted by Kennell and Associates and RTI during CMS-sponsored site visits to several LTCHs suggest a possible reason for this practice: one LTCH corporate executive reported that the company had found it easier to enter a mature LTCH market and attract patients away from other LTCHs than to enter a market without LTCHs and have to educate area physicians and hospitals about the LTCH care model (Dalton et al. 2012b).

11 Among all Medicare ICU patients receiving mechanical ventilation in 2006, only 16 percent of patients discharged alive were discharged to LTCHs, while 46 percent were discharged to SNFs or inpatient rehabilitation facilities (Kahn et al. 2010).

12 MMSEA and subsequent amendments allowed exceptions to the moratorium for (1) LTCHs that began their qualifying period demonstrating an average Medicare length of stay greater than 25 days on or before December 29, 2007; (2) entities that had a binding or written agreement with an unrelated party for the construction, renovation, lease,

or demolition of an LTCH, with at least 10 percent of the estimated cost of the project already expended on or before December 29, 2007; (3) entities that had obtained a state certificate of need on or before December 29, 2007; (4) existing LTCHs that had obtained a certificate of need for an increase in beds issued on or after April 1, 2005, and before December 29, 2007; and (5) LTCHs located in a state with only one other LTCH that sought to increase beds after the closure or decrease in the number of beds of the state's other LTCH.

13 It is difficult to determine a precise number of LTCHs because of discrepancies in Medicare's data sources on these facilities. Cost report data indicate that 420 LTCHs filed valid cost reports in 2012, 3 more than in 2011. However, as we have found in previous years, Medicare's Provider of Service (POS) file includes a larger number of facilities (442 in 2012) than are found in the cost report file. The two data sources differ for a number of reasons. Some Medicare-certified LTCHs may not yet have filed a cost report for 2012 when we undertook our analysis. In addition, LTCHs with very low Medicare patient volume may be exempt from filing cost reports. At the same time, POS data may overstate the total number of LTCHs because facilities that close may not be immediately removed from the file. The cost report data therefore provide a more conservative estimate of total capacity and supply but may not accurately reflect the most recent changes in supply. A previous Commission analysis revealed inaccuracies in ownership status in the POS data, so we have opted to rely on cost report data to determine the distribution of facilities across ownership and location categories.

14 Such a policy has been in place for hospitals since 2003. Under Medicare's Hospital Inpatient Quality Reporting Program, CMS requires hospitals to report a specified list of quality measures each year in order to receive a full update to Medicare payment rates in the ensuing year. This program creates incentives for providers not only to report the quality of their care but also to take steps to improve it and raise their quality scores. CMS makes some of the quality data available to consumers on Medicare's Hospital Compare website. More than 95 percent of hospitals opt to participate in the program.

15 We observed a higher readmission rate (21.7 percent) for cases with respiratory diagnoses with mechanical ventilation lasting less than 96 hours (MS–LTC–DRG 208). However, a higher rate of readmission is expected for this group since it is defined in part by the length of time a service (mechanical ventilation) is received. Any patient with a respiratory principal diagnosis with use of mechanical ventilation who is readmitted to a short-term ACH within four days will be assigned to MS–LTC–DRG 208, while a similar patient who stays in the LTCH for a longer period likely will be assigned to MS–LTC–DRG 207 (respiratory diagnosis with mechanical ventilation lasting more than 96 hours). When we combined cases assigned to MS–LTC–DRGs 207 and 208 and recalculated the rate of readmission, we found that 13.6 percent of these cases were readmitted in 2012.

16 Another factor was growth in the reported patient case-mix index (CMI), which measures the expected costliness of a facility's patients (Centers for Medicare & Medicaid Services 2010, Centers for Medicare & Medicaid Services 2009, Centers for Medicare & Medicaid Services 2008, Centers for Medicare & Medicaid Services 2007, Centers for Medicare & Medicaid Services 2006). Refinements to the LTCH case-mix classification system, implemented in October 2007, likely led to more complete documentation and coding of the diagnoses, procedures, services, comorbidities, and complications that are associated with payment, thus raising the average CMI, even though patients may have been no more resource intensive than they were previously (Centers for Medicare & Medicaid Services 2009, Medicare Payment Advisory Commission 2009, RAND Corporation 1990). Although some part of the increase in LTCHs' CMI between 2008 and 2009 was due to growth in the intensity and complexity of the patients admitted, CMS estimated that the case-mix increase attributable to documentation and coding improvements was 2.5 percent (Centers for Medicare & Medicaid Services 2010, Centers for Medicare & Medicaid Services 2009). Those improvements contributed to growth in payments to providers without corresponding increases in providers' costs. CMS reduced the update to the LTCH base payment rate in fiscal years 2010 and 2011 to partly offset payment increases due to documentation and coding improvements between 2007 and 2009.

17 The Patient Protection and Affordable Care Act of 2010 (PPACA) specified that the annual update to the LTCH standard payment rate in 2011 be reduced by half a percentage point. That requirement, combined with a CMS offset to the 2011 update to account for past improvements in documentation and coding, resulted in a negative update to the LTCH payment rate in 2011. PPACA also mandated a 1.1 percent reduction in the LTCH standard payment rate in 2012.

18 Many new LTCHs operate at a loss for a period of time after opening. For this analysis of high- and low-margin LTCHs, we examined only LTCHs that submitted valid cost reports in both 2011 and 2012. We excluded government-owned LTCHs.

19 In a CMS-sponsored study using data from 2005 and 2006, RTI found that overall LTCH margins had declined since the first years of the LTCH PPS, but LTCH DRG weights continued to be systematically distorted in favor of case types that use extensive respiratory therapy and other ancillary services and against case types that rely on more intense nursing (Gage et al. 2007).

20 The Commission found that the number of SNFs admitting medically complex patients declined between 2005 and 2009 and reported that the decline likely reflected the relative attractiveness of the payments for other case-mix groups, such as rehabilitation (Medicare Payment Advisory Commission 2012b). Following changes in the payment rates for medically complex patients, the number of SNFs admitting such cases increased between 2009 and 2011, but the SNF PPS continues to disadvantage SNFs that admit high shares of medically complex patients (Medicare Payment Advisory Commission 2013, Wissoker and Zuckerman 2012).

21 The Commission and other researchers have found that patients who use LTCHs tend to have shorter acute care hospital stays than similar patients who do not use these facilities, suggesting that LTCHs substitute for at least part of the acute hospital stay (Kahn et al. 2013, Medicare Payment Advisory Commission 2004). Early transfers may distort the acute inpatient PPS relative weights by reducing the costs of acute care hospitals that routinely transfer patients to LTCHs. To the extent that such distortion occurs, even after recalibration, acute care hospital payments may be too low for some patients in areas without LTCHs.

22 Routine resource intensity was measured using the weighted sum of total nontherapy direct care staff time per individual patient. The time of nontherapy support staff directly involved in the care of specific patients was also included. The weights were national average wages for each person's occupation and licensure level. This is, in effect, a measure of the summed labor-related portion of direct care costs, ignoring fringe benefits.

23 In a report on CMS-sponsored site visits to LTCHs and IPPS critical care units, Dalton and colleagues reported that every LTCH they visited claimed to focus on identifying medically complex but currently stable patients with a history of organ failure or complicating chronic conditions and continuing acute care needs. These included tracheostomy patients with a history of failure to wean (but a prognosis as weanable), recently weaned but still severely compromised respiratory patients, patients with serious infections and complicating comorbities requiring multiple intravenous medications, and complex wound patients (Dalton et al. 2012b).

24 One important limitation in this study is that it excluded payments for SNF and other post-acute care services used during the episode of care. As the authors point out, if LTCH stays were substituting, even in part, for high-level SNF care, the model would overstate the episode payment differential attributable to LTCH use. To explore the effects of this limitation, the researchers looked at episodes that included SNF days and found that, on the basis of days of care, there was little evidence of a substitution effect between SNFs and LTCHs. Overall, 41.2 percent of episodes that used LTCHs and 42.7 percent of matched non-LTCH episodes had a SNF stay during the episode.

25 Postoperative recovery rooms, postanesthesia recovery rooms, maternity labor rooms, and subintensive or intermediate care units are specifically excluded by statute. See 42 CFR §413.53(b).

26 Two or more intensive care type units that concurrently share nursing staff can be reimbursed as one combined intensive care type unit if all other criteria are met. Nurses who "float" or work in different units on an as-needed basis can be utilized in the ICU, with costs allocated to the appropriate units depending upon the time spent in those units. See 42 CFR §413.53(d)(2).

27 Included in the calculation of this nurse–patient ratio are registered nurses, licensed vocational nurses, licensed practical nurses, and nursing assistants who provide patient care. General support personnel such as ward clerks, custodians, and housekeeping personnel cannot be included. See 42 CFR §413.53(d)(5).

References

Barclays. 2013. *Kindred Healthcare: Phase 2: Incentives aligned for growth.* Equity research. November 13. New York, NY: Barclays Capital Inc.

Barnato, A. E., D. L. Anthony, J. Skinner, et al. 2009. Racial and ethnic differences in preferences for end-of-life treatment. *Journal of General Internal Medicine* 24, no. 6 (June): 695–701.

Borum, M. L., J. Lynn, and Z. Zhong. 2000. The effects of patient race on outcomes in seriously ill patients in SUPPORT: An overview of economic impact, medical intervention, and end-of-life decisions. Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments. *Journal of the American Geriatrics Society* 48, no. 5, supplement (May): S194–198.

Carson, S. S., J. Garrett, L. C. Hanson, et al. 2008. A prognostic model for one-year mortality in patients requiring prolonged mechanical ventilation. *Critical Care Medicine* 36, no. 7 (July): 2061–2069.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2013. Medicare program; hospital inpatient prospective payment systems for acute care hosptials and the long term care hospital prospective payment system and proposed fiscal year 2014 rates; quality reporting requirements for specific providers; hospital conditions of participation. Proposed rule. *Federal Register* 78, no. 91 (May 10): 27486–27823.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2010. Medicare program; hospital inpatient prospective payment systems for acute care hospitals and the long term care hospital prospective payment system changes and FY 2011 rates; provider agreements and supplier approvals; and hospital conditions of participation for rehabilitation and respiratory care services; Medicaid program: accreditation for provider of inpatient psychiatric services. Final rule. *Federal Register* 75, no. 157 (August 16): 50042–50677.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2009. Medicare program; changes to the hospital inpatient prospective payment systems for acute care hospitals and fiscal year 2010 rates; and changes to the long term care hospital prospective payment system and rate years 2010 and 2009 rates. Final rule. *Federal Register* 74, no. 165 (August 27): 43754–44236.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2008. Medicare program; prospective payment system for long-term care hospitals RY 2009; annual payment rate updates, policy changes, and clarifications; and electronic submission of cost reports: revision to effective date of cost reporting period. Final rule. *Federal Register* 73, no. 91 (May 9): 26787–26874.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2007. Medicare program; prospective payment system for long-term care hospitals RY 2008; annual payment rate updates and policy changes; and hospital direct and indirect graduate medical education policy changes. Final rule. *Federal Register* 72, no. 91 (May 11): 26870–27029.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. Medicare program; prospective payment for long-term care hospitals RY 2007; annual payment rate updates, policy changes, and clarification. Final rule. *Federal Register* 71, no. 92 (May 12): 27798–27939.

Dalton, K., A. Kandilov, D. Kennell, et al. 2012a. *Determining medical necessity and appropriateness of care for Medicare long-term care hospitals (LTCHs): Final report.* Prepared under contract by Kennell and Associates, Inc., and Research Triangle International for the Centers for Medicare & Medicaid Services. Baltimore, MD: CMS.

Dalton, K., D. Kennell, S. Bernard, et al. 2012b. *Determining medical necessity and appropriateness of care for Medicare long-term care hospitals (LTCHs): Report on site visits to IPPS critical care services and LTCHs.* Prepared under contract by Kennell and Associates, Inc., and Research Triangle International for the Centers for Medicare & Medicaid Services. Baltimore, MD: CMS.

Diringer, M. N., D. F. Edwards, V. Aiyagari, et al. 2001. Factors associated with withdrawal of mechanical ventilation in a neurology/neurosurgery intensive care unit. *Critical Care Medicine* 29, no. 9 (September): 1792–1797.

Donahoe, M. P. 2012. Current venues of care and related costs for the chronically critically ill. *Respiratory Care* 57, no. 6 (June): 867–886.

Gage, B., N. Pilkauskas, K. Dalton, et al. 2007. *Long-term care hospital (LTCH) payment system monitoring and evaluation: Phase II report.* Prepared under contract to the Centers for Medicare & Medicaid Services. Waltham, MA: RTI International.

Gage, B., L. Smith, M. Morley, et al. 2011. *Post-acute care payment reform demonstration: Report.* Prepared under contract to the Centers for Medicare & Medicaid Services. Baltimore, MD: CMS.

Kahn, J. M., N. M. Benson, D. Appleby, et al. 2010. Long-term acute care hospital utilization after critical illness. *Journal of the American Medical Association* 303, no. 22 (June 9): 2253–2259.

Kahn, J. M., R. M. Werner, G. David, et al. 2013. Effectiveness of long-term acute care hospitalization in elderly patients with chronic critical illness. *Medical Care* 51, no. 1 (January): 4–10.

Kandilov, A., and K. Dalton. 2011. *Utilization and payment effects of Medicare referrals to long-term care hospitals (LTCHs).* Prepared under contract to the Centers for Medicare & Medicaid Services. Research Triangle Park, NC: RTI International.

Kennell and Associates Inc. 2010. *Determining medical necessity and appropriateness of care for Medicare long-term care hospitals.* Prepared under contract to the Centers for Medicare & Medicaid Services. Falls Church, VA: Kennell and Associates, Inc.

Kindred Healthcare. 2013a. Annual report (Form 10–K). Filing submitted to the Securities and Exchange Commission.

Kindred Healthcare. 2013b. Quarterly report (Form 10–Q). Filing submitted to the Securities and Exchange Commission.

Koenig, L., J. Saavoss, S. Sankaran, et al. 2013. *The effects of long-term care hospitals on outcomes, utilization and payments for Medicare beneficiaries: Final report.* Prepared under contract to the National Association of Long Term Hospitals by KNG Health Consulting LLC. West Hartford, CT: National Association of Long Term Hospitals.

Macintyre, N. R. 2012. Chronic critical illness: The growing challenge to health care. *Respiratory Care* 57, no. 6 (June): 1021–1027.

Mayr, F. B., S. Yende, W. T. Linde-Zwirble, et al. 2010. Infection rate and acute organ dysfunction risk as explanations for racial differences in severe sepsis. *Journal of the American Medical Association* 303, no. 24 (June 23): 2495–2503.

Medicare Payment Advisory Commission. 2013. *Report to the Congress: Medicare payment policy.* Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2012a. *Data book: Health care spending and the Medicare program.* Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2012b. *Report to the Congress: Medicare payment policy.* Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2011. *Report to the Congress: Medicare payment policy.* Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2009. *Report to the Congress: Medicare payment policy.* Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2008. *Report to the Congress: Reforming the delivery system.* Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2004. *Report to the Congress: New approaches in Medicare.* Washington, DC: MedPAC.

Morley, M., N. Coomer, B. Gage, et al. 2011. *Post-acute care episode risk adjustment using CARE assessment data.* Report prepared for the Assistant Secretary for Planning and Evaluation. Waltham, MA: RTI International.

Nelson, J. E., C. E. Cox, A. A. Hope, et al. 2010. Chronic critical illness. *American Journal of Respiratory and Critical Care Medicine* 182, no. 4 (August 15): 446–454.

Nierman, D. M., and J. E. Nelson. 2002. Chronic critical illness. *Critical Care Clinics* 18, no. 4: xi–xii.

Prospective Payment Assessment Commission. 1996. *Report and recommendations to the Congress.* Washington, DC: ProPAC.

RAND Corporation. 1990. *Methodology for measuring case-mix change: How much change in the case mix is DRG creep?* E–90–5. Arlington, VA: RAND Corporation. April.

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

Wissoker, D., and S. Zuckerman. 2012. *Impacts of a revised payment system for SNFs.* A memo prepared by staff from the Urban Institute for the Medicare Payment Advisory Commission. Washington, DC: MedPAC.

Zilberberg, M. D., M. de Wit, and A. F. Shorr. 2012. Accuracy of previous estimates for adult prolonged acute mechanical ventilation volume in 2020: Update using 2000–2008 data. *Critical Care Medicine* 40, no. 1 (January): 18–20.

Zilberberg, M. D., R. S. Luippold, S. Sulsky, et al. 2008. Prolonged acute mechanical ventilation, hospital resource utilization, and mortality in the United States. *Critical Care Medicine* 36, no. 3 (March): 724–730.