Final Report No. 101 *April 2011*

Trends in Skilled Nursing Facility and Swing Bed Use in Rural Areas Following the Medicare Modernization Act of 2003

The North Carolina Rural Health Research & Policy Analysis Center

Authors:

Kristin L. Reiter, PhD

Victoria A. Freeman, RN, DrPH

NC Rural Health Research & Policy Analysis Center

This study was funded under a cooperative agreement with the Federal Office of Rural Health Policy (ORHP), Health Resources and Services Administration, U.S. Department of Health and Human Services, Grant Number U1GRH07633. The conclusions and opinions expressed in this paper are the authors' alone; no endorsement by The University of North Carolina, ORHP, or other sources of information is intended or should be inferred.

The North Carolina Rural Health Research and Policy Analysis Center is based at the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill. For more information about the Center and its publications, please contact:

North Carolina Rural Health Research and Policy Analysis Center
725 Martin Luther King Jr. Blvd, CB7590
Chapel Hill, NC 27599-7590
Phone: (919) 966-5541
Fax: (919) 966-5764
www.shepscenter.unc.edu/research_programs/rural_program/
NCRural@unc.edu

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

INTRODUCTION 5

BACKGROUND 5

METHODS 7

FINDINGS 8

I. AVAILABILITY OF FACILITY-BASED POST-ACUTE SKILLED CARE IN RURAL COMMUNITIES 8

A. Changes in the Types of Post-Acute Skilled Care in Rural Areas 8

B. Changes in Post-Acute Skilled Care Days across All Skilled Care Settings 10

II. AVAILABILITY OF HOSPITAL-BASED POST-ACUTE SKILLED CARE IN RURAL AREAS 11

A. Changes in Hospital-Based Post-Acute Skilled Care Providers 11

B. Changes in Swing Bed Providers 13

C. Changes in the Mix of Hospital-Based Skilled Care Days 16

D. Changes in Average Daily Census for Swing Bed Care 19

III. TRENDS IN SWING BED USE IN CRITICAL ACCESS HOSPITALS 21

DISCUSSION AND CONCLUSIONS 22

REFERENCES 24

EXECUTIVE SUMMARY

Dalton et al.[1] documented substantial and important changes in the availability and provision of post-acute skilled care in rural areas during a period of extensive change in Medicare reimbursement policy that began with the Balanced Budget Act of 1997. However, there remains an overall need for post-acute skilled care, with a variety of options, for rural Americans. Now that the reimbursement policy changes begun in the late 1990s have been fully implemented, has the availability of post-acute skilled care stabilized, and how and where is it being provided today?

To answer these questions, we used hospital and skilled nursing facility (SNF) Medicare Cost Reports linked with county demographic information to analyze changes in post-acute skilled care availability and use over the period 2003 to 2008. Results are presented for different levels of rurality and, in the case of hospital-based care, for the two predominant types of hospitals in rural areas, i.e., hospitals paid under the prospective payment system (PPS) and Critical Access Hospitals (CAHs).

Key findings are as follows:

Access to post-acute skilled care in rural areas has improved since 2003; however, choice and availability remain limited in some counties. Community-based freestanding skilled nursing facilities are the predominant source of skilled care for rural residents.

Options for post-acute skilled care are available for many rural residents but availability and choice are limited for some residents residing in the most rural areas.

- Both SNF and swing bed post-acute care are available in more than one-half of rural counties.

- Eleven percent (11%) of non-core based statistical area (non-CBSA) counties (0.5% of the non-CBSA population) lack any type of post-acute skilled care.

The swing bed program represents a very small proportion of all post-acute skilled care in rural areas, but may be important for access for certain populations.

- Swing bed days are less than 1% of total skilled care days in micropolitan areas and less than 2% of total skilled care days in non-CBSAs.

- Growth in skilled care days has been driven by freestanding, community-based SNFs. Freestanding SNF days increased by 23% in micropolitan areas and 19% in non-CBSAs.

- In 2008, 4.1% of the population in non-CBSAs resided in counties where the only access to post-acute skilled care was through swing beds.

Access to any hospital-based post-acute skilled care has changed little since 2003; however, the type of skilled care available is changing. The swing bed program is growing, largely due to the conversion of PPS hospitals to CAH status.

Access to hospital-based SNFs has declined in rural areas.

- The proportion of micropolitan and non-CBSA hospitals operating Medicare-certified hospital-based SNFs declined by 23% and 9%, respectively, to 28.9% and 22.6% by 2008.

- The decline in the proportion of hospitals operating SNFs was higher among prospective payment system (PPS) hospitals, a 19% decline, than among CAHs, a 13% decline.

Swing bed participation and total swing bed days have grown.

- Since 2003 the total number of non-metropolitan hospitals with certified swing beds increased 7% to 1,454 in 2008, and the total number of swing bed days increased 9% to 974,184 in 2008; growth was concentrated in the period 2003-2006.

- The greatest proportional growth in swing bed participation occurred in micropolitan areas. However, much of the growth in swing bed hospitals in rural areas was driven by growth in the number of CAHs from 686 in 2003 to 1,040 in 2006.

- Swing bed days as a proportion of hospital-based post-acute skilled days grew by 33% in micropolitan areas and 11% in non-CBSAs, primarily as a result of declines in the number of hospital-based SNF days over the period 2003 to 2008.

- Swing bed average daily census (ADC) has remained relatively constant in both PPS hospitals and CAHs. Even among high swing bed users, CAH and PPS hospital swing bed ADCs are similar.

The proportion of CAHs with swing beds has not changed and the contribution of swing beds to CAH average daily census has increased only modestly and only in the most rural areas.

- In all years 2003-2008, ninety percent (90%) or more of CAHs offered swing bed care; the percentage is highest in the most rural areas.

- The average daily swing bed census in CAHs decreased in micropolitan areas from 1.89 to 1.69. In non-CBSAs, rural areas with fewer options for post-acute skilled care, the average daily swing bed census increased from 1.73 to 1.97.

A claims-based study of Medicare hospital-based and freestanding post-acute skilled care patients is warranted as a follow up to this study to identify differences in case mix between hospital-based SNF, freestanding community-based SNF, and swing bed patients. Such information is important for understanding the role of swing beds in meeting patient needs as availability of hospital-based SNFs continues to decline.

INTRODUCTION

Dalton et al.[1] documented substantial and important changes in the availability and provision of post-acute skilled nursing care in rural areas during a period of extensive change in Medicare reimbursement policy that began with the Balanced Budget Act of 1997. However, there remains an overall need for post-acute skilled care, with a variety of options, for rural Americans. Now that the reimbursement policy changes begun in the late 1990s have been fully implemented, has the availability of post-acute skilled care stabilized, and how and where is it being provided today?

To answer these questions, we used hospital and skilled nursing facility (SNF) Medicare Cost Reports linked with county demographic information to analyze changes in facility-based post-acute skilled care availability and use in recent years. Results are presented for different levels of rurality and, in the case of hospital-based care, for the two predominant types of hospitals in rural areas, i.e., hospitals paid under the prospective payment system (PPS) and Critical Access Hospitals (CAHs).

BACKGROUND

Cost control mechanisms in Medicare reimbursement policy have changed the provision of inpatient care in recent decades. Hospitals paid under PPS are reimbursed a fixed amount for inpatient care based on diagnosis-related groups (DRGs), creating incentives for shorter lengths of stay. Similarly, CAHs, which receive cost-based reimbursement for services to Medicare beneficiaries, are limited to an average length of stay of 96 hours for inpatients. These constraints on the provision of inpatient care have led to a need for and use of post-acute skilled nursing care for patients who reach the limit of their inpatient care eligibility, but still need skilled care before being safely discharged to home or another institution.

Post-acute skilled care is frequently provided in SNFs, including those that are community-based (often called freestanding) and those based at hospitals. In rural PPS hospitals with fewer than 100 beds and in CAHs, post-acute skilled care can also be provided in "swing beds," i.e., inpatient beds that can be used for either acute or post-acute care as needed. The intent of the swing bed program is to increase access to post-acute skilled care for rural Medicare beneficiaries and to maximize the efficiency of small and rural hospital operations.[2]

Reimbursement for facility-based post-acute skilled care has been affected by multiple regulatory changes, particularly during the period from 1997 to 2003.[1] Payment for post-acute skilled care received in freestanding or hospital-based SNFs was changed from cost-based to a 100% per diem prospective payment system (SNF-PPS) in a phased-in process that began in 1998 and was fully implemented by 2002. The SNF-PPS applies to all SNFs, regardless of whether they are operated by a PPS hospital, a CAH, or as a freestanding community facility.

Reimbursement for post-acute skilled care in swing beds also changed. Reimbursement for swing bed care in PPS hospitals changed from a mix of cost-based payment for ancillary services and per-diem payment for routine care to 100% SNF-PPS. In contrast, reimbursement for swing bed care in CAHs changed from a mix of cost and per diem to 101% of cost.

Dalton and colleagues[1] at the North Carolina Rural Health Research and Policy Analysis Center examined trends in SNF and swing bed use and availability during this period of regulatory change to identify shifts in the supply or setting of post-acute skilled care. They found that the period was marked by several important changes. There was a substantial reduction in the number of hospital-based SNFs in rural areas (20% overall in rural counties), with the greatest reduction occurring among PPS hospitals (19% for PPS vs. 8% for CAH). Over the same period, the number of freestanding SNFs increased by 11% in rural areas, and the proportion of hospitals using swing beds increased by 36%. Many small rural hospitals converted to CAHs during this period, accounting for most of the growth in swing bed participation. Use of swing beds in CAHs, as measured by average daily census, was similar to use in other hospitals, suggesting that the shift to cost-based reimbursement did not substantially change swing bed utilization among CAHs. The total number of Medicare SNF days grew over the period, with most of the growth absorbed by freestanding, community-based SNFs. As a result, swing bed care as a share of all Medicare post-acute skilled care days declined.

Since 2003, there have been adjustments to the reimbursement structure for post-acute skilled care but no major overhaul such as that seen in the late 1990s[3], raising the question of whether the availability and types of post-acute skilled care in rural areas have stabilized in the ensuing years. This study extends the previous work by Dalton and colleagues to answer the following questions:

1. How has the availability and use of facility-based post-acute skilled care in rural areas, including community-based SNFs, changed since 2003?

2. Has the number and percent of hospital-based SNF providers in rural areas changed?

    a. Was there a difference in change among micropolitan hospitals compared to hospitals in more rural non-core based statistical areas?

    b. Was there a difference in change among CAHs compared to rural PPS hospitals?

3. How has the use of swing beds changed over time in rural areas?

    a. How has the use of swing beds changed overall?

    b. How has the use of swing beds changed over time as a share of total Medicare hospital-based skilled care days?

    c. How has the use of swing beds changed over time in CAHs versus rural PPS hospitals?

This study is limited to examination of facility-based post-acute skilled care, i.e., care provided in SNFs or in swing beds. It does not include post-acute care provided by home health or hospice providers.

METHODS

Study data were obtained from Medicare hospital and SNF Cost Reports included in the files released by the Centers for Medicare and Medicaid Services in June 2010. Data from the Medicare cost reports were geo-coded and merged with county-level information on rural/urban status. For these analyses, rural is defined as location in a nonmetropolitan county, and most analyses are divided into two groups: micropolitan counties (counties with an urban core population of at least 10,000 but less than 50,000) and more rural non-core based statistical area (non-CBSA) counties, those with an urban core of less than 10,000 or no urban core.

The dataset for analysis of hospital-based skilled care included 32,494 hospital year observations from 5,031 unique hospitals (Table 1) with 41% (N=2,073) of hospitals located in non-metropolitan areas. The dataset included all cost reports submitted to date for 2003 through 2009, but a final report for 2009 was not available for all hospitals. A final cost report for 2008 was available for 2,003 (96.6%) of rural hospitals and analysis was limited to those hospitals.

Table 1: Hospital Cost Reports in Analysis File

	Number
Number of records in Cost Report files	32,494
Number of hospitals after adjusting for CAH conversions*	5,031
Number of rural hospitals	2,073
Period Covered:	
Earliest month / year end	January 2003
Latest month / year end	December 2009
Number of rural hospitals with final Cost Report for 2008	2,003

Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release
*Hospitals converting to CAH status during the study period received new hospital ID numbers post-conversion. Adjustment was made for these conversions and hospitals were counted only once in each year.

Descriptive statistics were calculated to assess changes in the supply and use of post-acute skilled care in rural areas both over time and by hospital type and rural location. Data for analysis of hospital-based care were aggregated by the calendar year of facilities' cost reporting period end dates. Approximately 64% of observations have fiscal year-ends other than December 31; therefore, utilization statistics do not reflect an exact count of days of care delivered during a calendar year or days of care for individuals discharged during a calendar year.

Because this study focuses on the constellation of post-acute skilled care that is available and used in rural areas, the analyses presented here are limited to facility-based care in non-metropolitan areas.

FINDINGS

Findings are presented in three sections. First, to gain a sense of the overall availability of post-acute skilled care of all types in rural areas, trends in the availability of hospital-based skilled care (SNF and swing bed) and freestanding community-based SNF care in rural counties are explored. The contribution of each type of service to the overall provision of post-acute skilled care is also examined. Second, hospital-based post-acute skilled care is examined in more detail to describe changes in the availability and use (in terms of days of care) of both types of hospital-based care. Finally, trends in swing bed care in CAHs are summarized and compared to trends in PPS hospitals to explore differences that might occur due to the reimbursement differential that favors CAHs.

I. AVAILABILITY OF FACILITY-BASED POST-ACUTE SKILLED CARE IN RURAL COMMUNITIES

The availability and use of post-acute skilled care at the county level, whether in swing beds, hospital-based SNFs, or freestanding SNFs, were examined. First, counties were characterized by whether a facility in that county reported at least one swing day and whether any facility in that county reported at least one SNF day. Second, the distribution of total skilled care days by setting – swing bed, hospital-based SNF and freestanding SNF – was explored.

A. Changes in the Types of Post-Acute Skilled Care in Rural Areas

Table 2 characterizes rural counties by the type of skilled care providers available. SNF care includes both hospital-based and freestanding SNFs.

Table 2: Number of Rural Counties with Post-Acute Skilled Care, by Type of Provider and Rurality, 2003-2008

	No Skilled Care	Swing Bed Care Only	SNF Care Only	Swing Bed + SNF Care	Total
Micropolitan Counties					
2003	36	8	376	268	688
2004	36	11	365	276	688
2005	34	12	360	282	688
2006	32	13	354	289	688
2007	33	13	347	295	688
2008	29	4	348	307	688
Non-CBSA Counties					
2003	184	134	362	674	1,354
2004	176	143	347	688	1,354
2005	168	132	342	712	1,354
2006	164	131	333	726	1,354
2007	163	137	329	725	1,354
2008	153	113	347	741	1,354

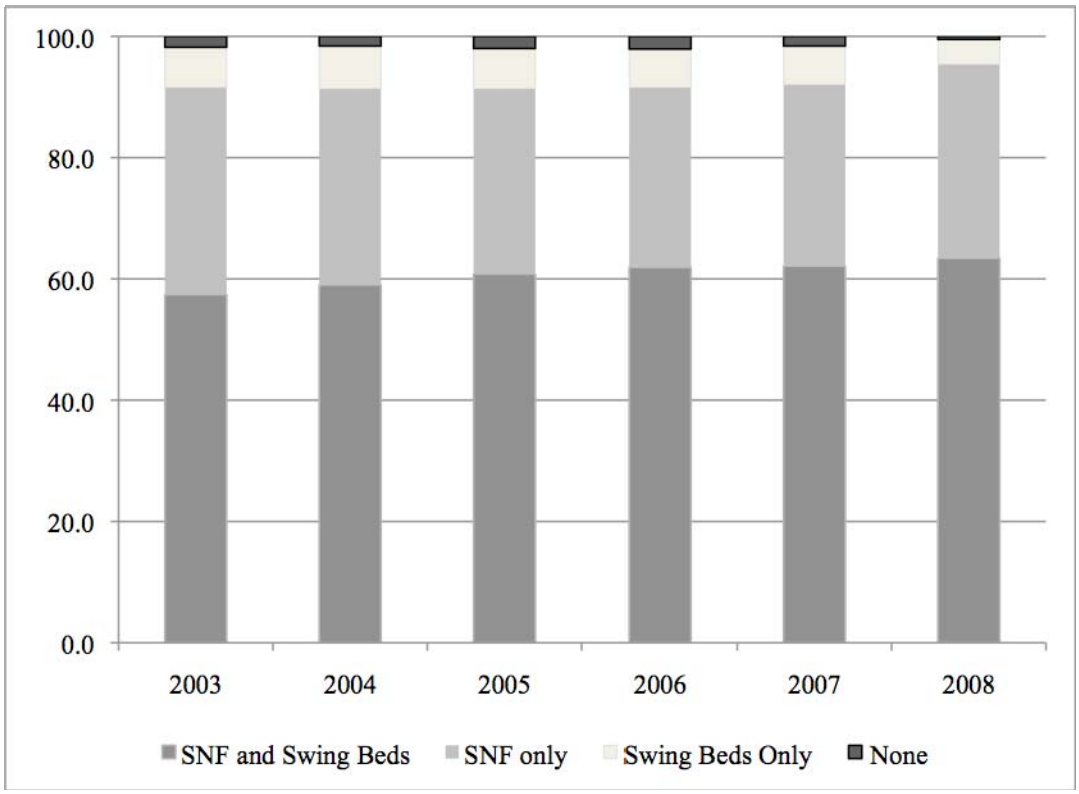
Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

The number of micropolitan counties with no skilled care providers fell by 7 (19%) from 2003 to 2008. These counties represented only 4% of micropolitan counties in the most recent year. Almost all counties (95%) have SNFs and 45% have both SNFs and swing beds. The number of counties with at least one swing bed provider increased by 13% (276 to 311), but the rate of increase slowed over the period.

The most rural counties (non-CBSA) are more likely to have no post-acute skilled care providers, although the number with none fell by 17% from 2003 to 2008, leaving 11% of non-CBSA counties without this service. The number of counties with only one type of provider (swing bed or SNF) also decreased while the number with swing bed and SNF care increased. In 2008, residents in 80% of the most rural counties had access to SNF care, residents in 63% had access to swing beds, and residents in just over half (55%) had access to both.

Although non-CBSA counties are more likely to be without post-acute skilled care providers, the population of these counties is also smaller, which translates to fewer persons affected by a lack of providers (Figure 1). The percent of the population residing in a non-CBSA county with no post-acute skilled care providers fell from 1.8% in 2003 to only 0.5% by 2008. In 2008, 95.4% of the non-CBSA population lived in a county with at least one hospital-based or freestanding SNF provider and 63.4% lived in a county with both swing bed and SNF services. In 2008, 4.1% of the non-CBSA population resided in counties where post-acute skilled care was available only in swing beds, down from 6.6% in 2008.

Figure 1: Percent of Non-CBSA Population with Access to Post-Acute Skilled Care in Their County, by Provider Type, 2003-08



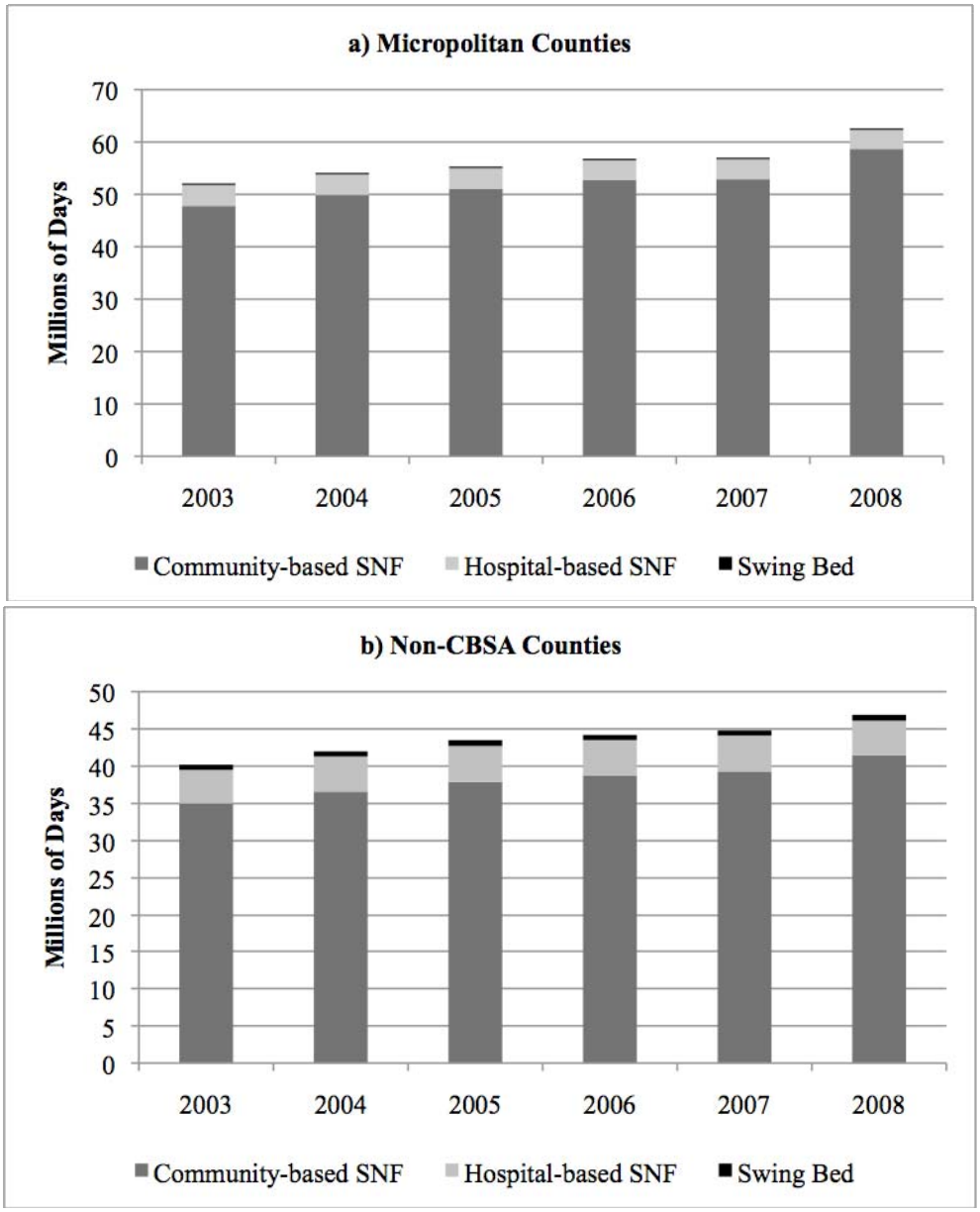
Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

B. Changes in Post-Acute Skilled Care Days across All Skilled Care Settings

The distribution of post-acute skilled days in micropolitan counties (Figure 2a) is dominated by days in community-based SNFs, which increased by 23% (47.8 to 58.7 million) over the study period. Hospital-based SNF days decreased from 4 to 3.6 million and swing bed days, at less than one million, remained a very small proportion of all post-acute skilled care days.

A similar trend is seen in non-CBSA counties (Figure 2b) where days in community-based SNFs predominate and are increasing (19% increase). The number of hospital-based SNF days was relatively constant over the period (range: 4.5-4.8 million), but represented a decreasing portion of all skilled nursing days. Although swing bed providers are more common in non-CBSAs, the number of swing bed days as a portion of all days is also relatively small at less than one million.

Figure 2. Post-Acute Skilled Care Days by Type of Provider and Rurality, 2003-2008



Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

II. AVAILABILITY OF HOSPITAL-BASED POST-ACUTE SKILLED CARE IN RURAL AREAS

Cost Report data allow us to examine trends in skilled care in hospital facilities (SNF and swing bed) in more detail. We assessed trends in the years following changes in reimbursement policy that resulted in different payment formulas for care in different settings. First, we examined the absolute number of hospitals providing post-acute care in SNFs and in swing beds. Second, we examined the contribution of each type of care to total hospital-based skilled care days.

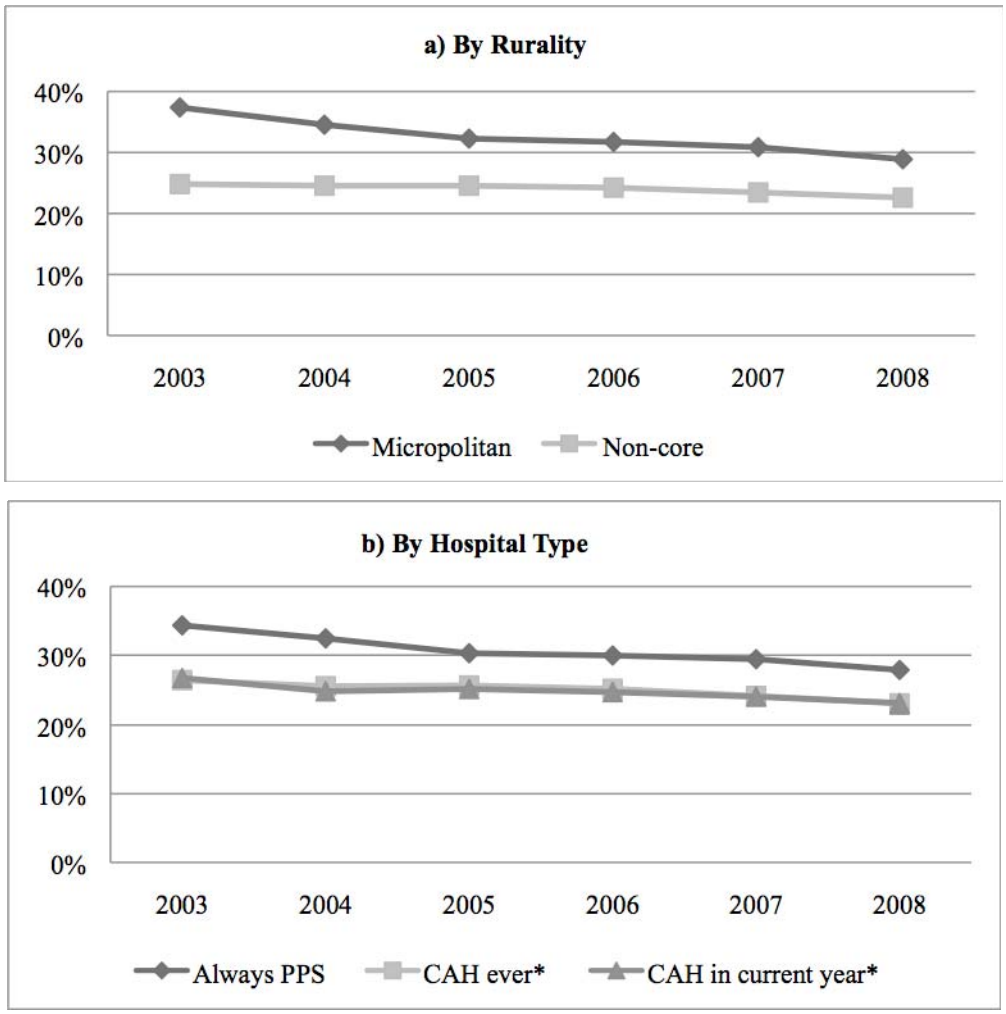
Over the study period, the number of PPS hospitals offering any post-acute skilled care decreased while the number of CAHs providing skilled care increased, particularly in non-CBSAs. From 2003 to 2008, the overall number of hospitals that provided post-acute skilled care changed little (1,634 vs. 1,626), primarily reflecting the offsetting change in status of 370 hospitals that converted from PPS to CAH. Over the same period, more hospitals provided swing bed care (1,361 vs. 1,454) and fewer hospitals offered SNF care (606 vs. 506).

A. Changes in Hospital-Based Post-Acute Skilled Care Providers

The proportion of hospitals that offer different types of skilled care is arguably a better marker of the availability of skilled care for rural residents. The proportion of rural hospitals that operate SNFs declined from 2003 to 2008. In 2003, approximately 37% of hospitals in micropolitan areas operated SNFs; this figure fell to just under 29% by 2008 (Figure 3a). Hospitals in the most rural communities (non-CBSAs) were less likely to provide hospital-based SNF care in 2003 but also less likely to have discontinued these services, with a decrease from nearly 25% to about 23% by 2008.

The decline in the proportion of hospitals operating SNFs in rural areas differed by type of hospital (Figure 3b). Among PPS hospitals, 34% operated SNFs in 2003 versus just under 28% in 2008. Among CAHs, including those that converted during this period, there was only a slight decline in the proportion operating SNFs, from approximately 26% in 2003 to 23% in 2008.

Figure 3. Rural Hospital Participation in Medicare-Certified SNF Units, 2003-2008



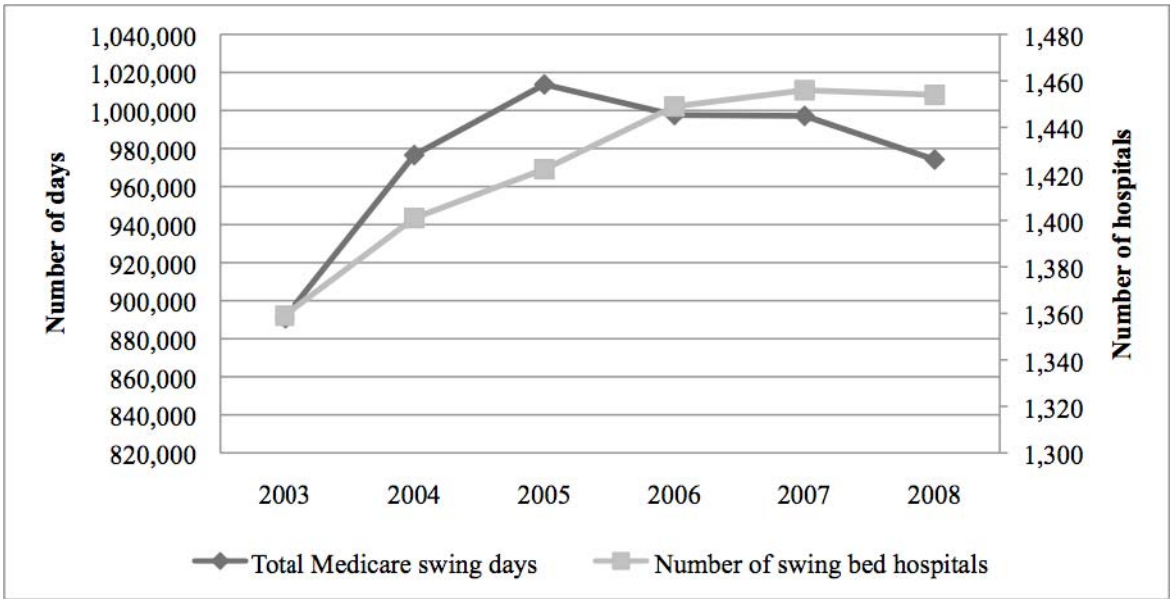
Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release
*Hospitals classified as CAH ever are all those that converted to CAH status by 2008; therefore, some hospitals included in this classification in earlier years were not CAHs in those years. There is little difference between hospitals that had converted to CAH status in a given year versus hospitals that converted to CAH status at any point during the study.

B. Changes in Swing Bed Providers

The swing bed designation applies to rural PPS hospitals with fewer than 100 beds and all CAHs. Medicare reimburses differently for care in swing beds (unlike reimbursement for care in hospital-based SNFs) depending on the hospital type. CAHs receive 101% of costs for swing bed care while PPS hospitals receive reimbursement based on the SNF PPS.

In contrast to the decline in the number of rural hospitals operating SNFs, the number of hospitals offering swing bed care increased over the study period (Figure 4). The total number of rural hospitals reporting certified swing beds increased by approximately 7% from 1,361 in 2003 to 1,454 in 2008, although most of the growth was concentrated in the period 2003 to 2006. Over the same period, the total number of reported Medicare swing days increased 9% from 890,735 in 2003 to 974,184 in 2008. Again, the growth was concentrated in the period when the number of swing bed hospitals increased.

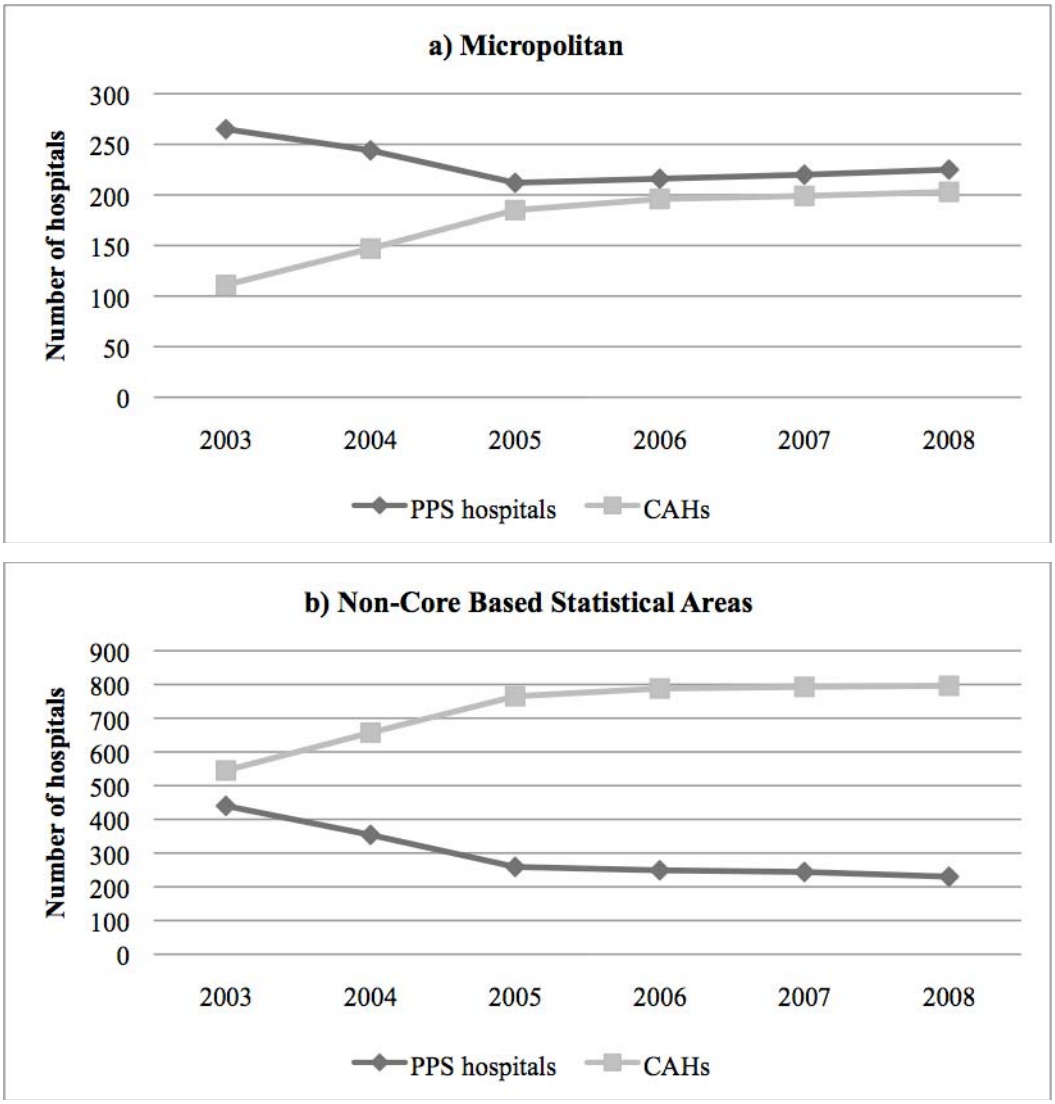
Figure 4. Number of Rural Swing Bed Hospitals and Swing Bed Days, 2003-2008



Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

The greatest proportional growth in hospitals with swing beds occurred in micropolitan areas (52 hospitals or a 14% increase) versus non-CBSAs (41 hospitals or a 4% increase) (Figure 5).

Figure 5. Rural Hospitals with Swing Beds by Rurality and Hospital Type, 2003-2008

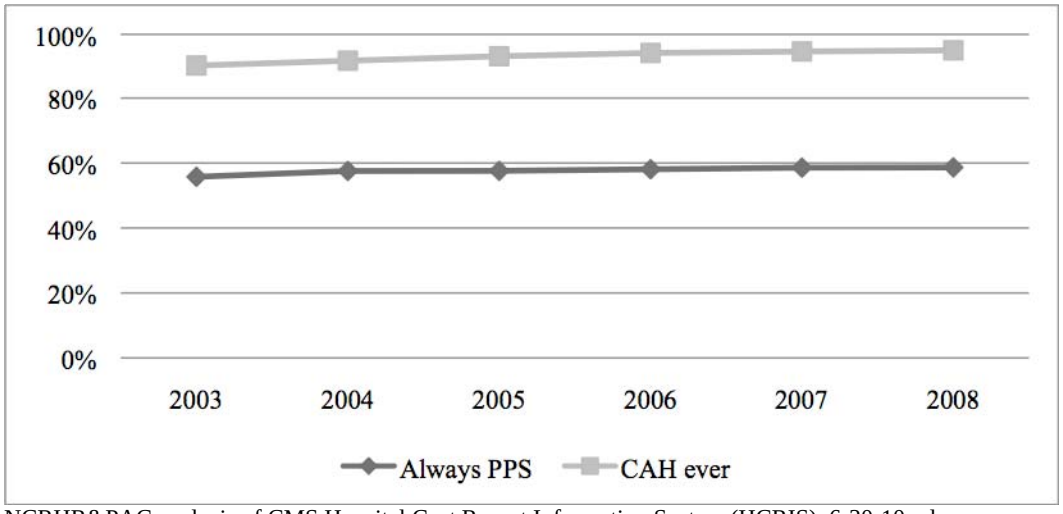


Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

The change in the number of CAH and PPS hospitals with swing beds is a function, in large part, of the 370 hospital conversions that occurred during this period. There was an increase in the number of CAHs and a concomitant decrease in the number of PPS hospitals. Although some PPS hospitals that converted added swing beds when they became CAHs, many had swing beds before conversion. While 370 hospitals converted to CAH, the total number of hospitals with swing beds increased by only 93.

A more informative way to assess the availability of hospital swing beds is to examine the proportion of hospitals offering this care (Figure 6). In all years, ninety percent (90%) or more of CAHs and hospitals that converted to CAH during the period had swing beds. The proportion of PPS hospitals with swing beds was lower but also constant over this period.

Figure 6. Proportion of Rural Hospitals with Swing Beds by Hospital Type, 2003-2008

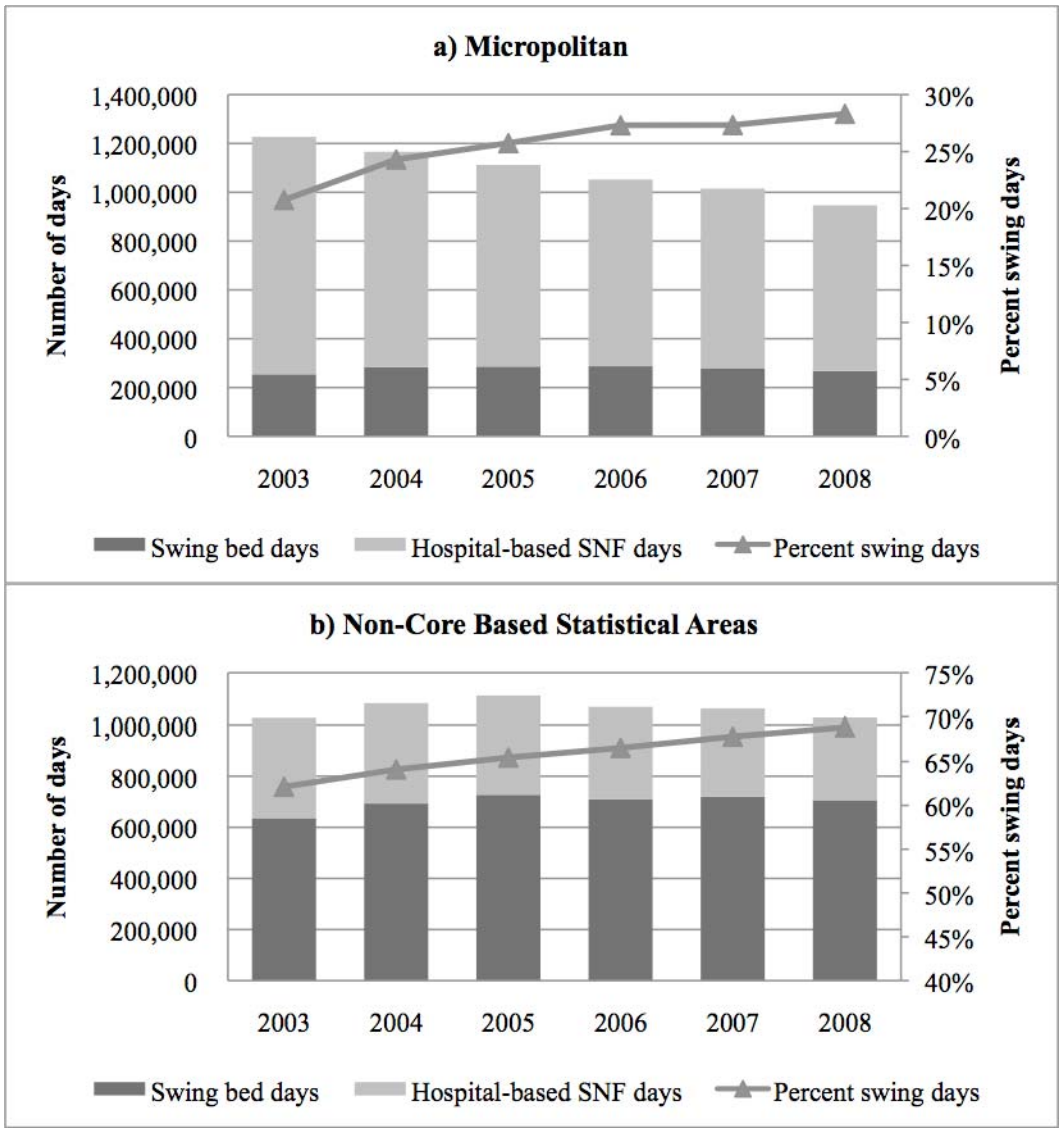


Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

C. Changes in the Mix of Hospital-Based Skilled Care Days

Care in swing beds, as a share of all hospital-based post-acute care, increased over the study period (Figure 7). For all hospitals in micropolitan areas, swing days increased by 5% while hospital-based SNF days declined by 30%. As a result, swing bed care as a share of all hospital-based post-acute skilled care increased by 33% (21% to 28%). Among all hospitals in the most rural areas (non-CBSAs), swing bed days increased by 11% while hospital-based SNF days declined by 18%, resulting in a relative increase of 11% (62% to 69%) in swing bed care as a share of all hospital-based skilled care days.

Figure 7. Share of Rural Hospital-Based Skilled Days in Swing Beds vs. SNFs among All Hospitals, 2003-2008



Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

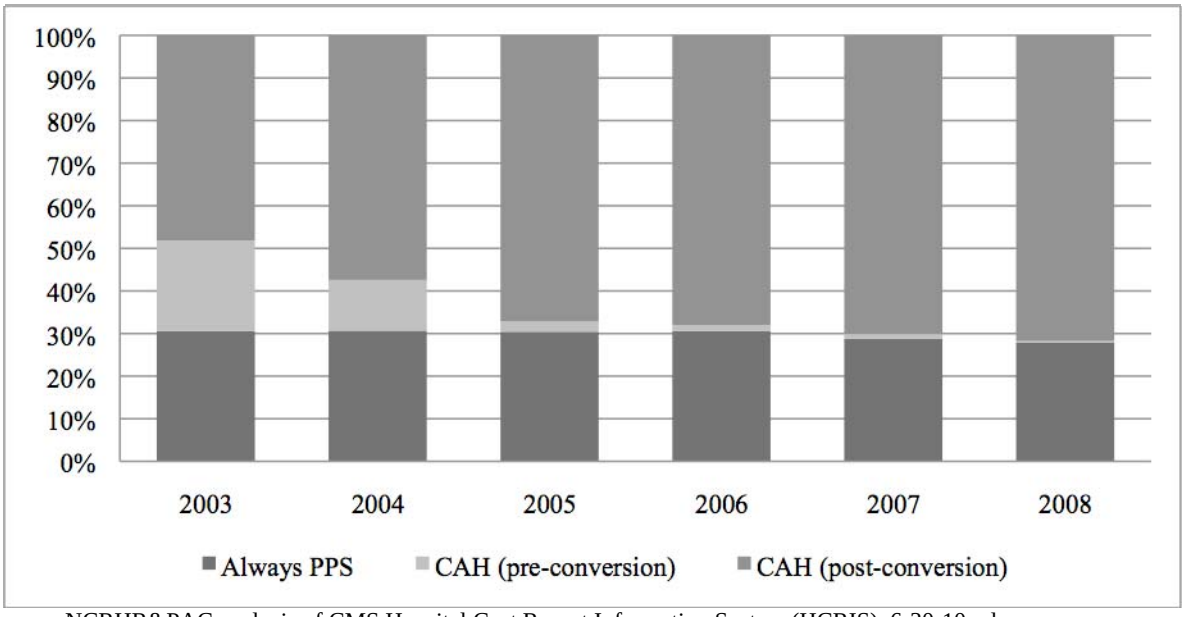
Among those hospitals with a choice of hospital-based post-acute skilled care for their patients, i.e., those with both swing beds and SNFs, swing bed care as a share of all post-acute skilled care days (Figure 8) increased less than did swing bed care among all hospitals (Figure 7). The relative increase in swing bed care as a share of all skilled care days was approximately 21% for hospitals in micropolitan areas and 6% for hospitals in non-CBSAs.

Figure 8. Share of Rural Hospital-Based Skilled Days in Swing Beds vs. SNFs among Hospitals Operating Both Types of Services, 2003-2008

Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

Since 2003, 70% of swing beds days have been in CAHs or in hospitals that would eventually convert to CAH status (Figure 9). The proportion of all swing bed days that were provided in hospitals that were always PPS decreased only slightly.

Figure 9. Share of Total Rural Medicare Swing Days by Hospital Reimbursement Type



Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

D. Changes in Average Daily Census for Swing Bed Care

Despite growth in the number of hospitals with swing beds and the total number of swing days, use of swing beds by individual hospitals, as measured by average daily census, has remained relatively constant over the study period. Table 3 shows the median and 75th percentile (as a marker for higher-use hospitals) for the swing bed average daily census (ADC) from 2003 to 2008 by hospital type. The median and 75th percentiles of ADC suggest little difference in swing bed occupancy between CAHs and PPS hospitals, even among high users, over time.

Also shown in this table is the ratio of acute care days to swing bed days. The ratio at PPS hospitals has increased over time. For CAHs after conversion, the ratio has remained constant with acute care days outnumbering swing days 2 to 1.

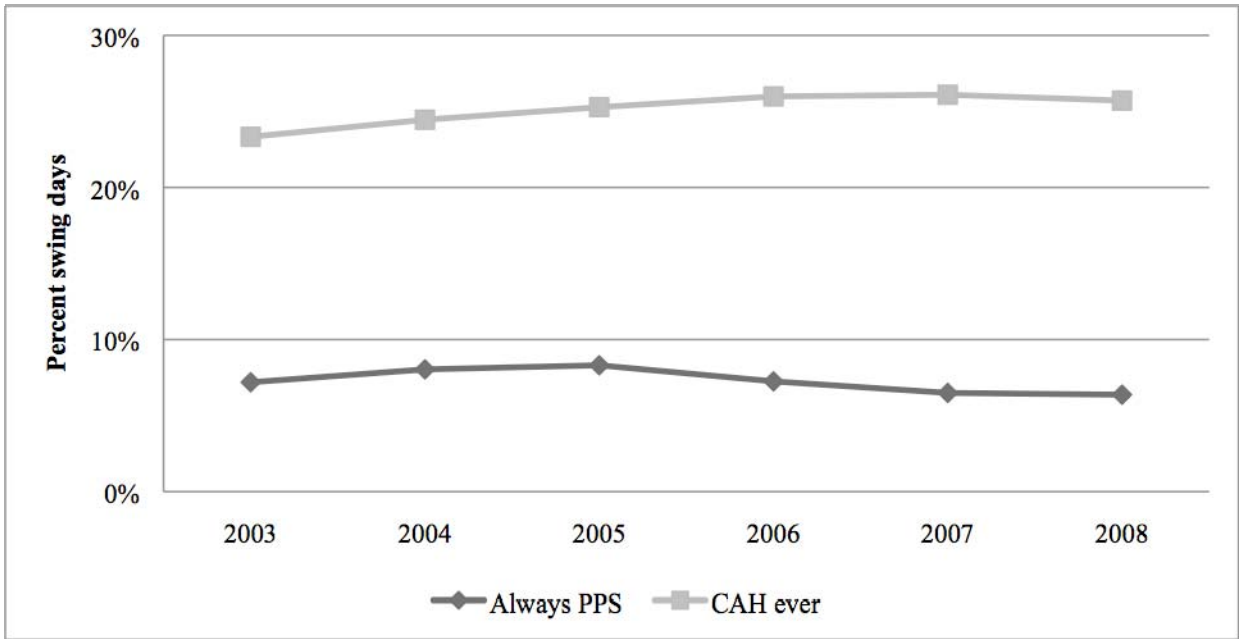
Table 3. Median Swing Bed Average Daily Census (ADC) and Acute to Swing Ratio over Time by Hospital Type, 2003-2008

		Rural swing bed hospitals		
		Always PPS	CAH, pre-conversion	CAH, post-conversion
2003	Number of hospitals	415	289	656
	Swing ADC: 50th percentile	1.2	1.3	1.4
	75th percentile	2.9	3.0	2.5
	Acute days for each swing day (median)	8.7	5.0	2.1
2004	Number of hospitals	437	160	803
	Swing ADC: 50th percentile	1.3	1.3	1.5
	75th percentile	3.0	3.0	2.6
	Acute days for each swing day (median)	7.9	4.8	2.2
2005	Number of hospitals	437	33	951
	Swing ADC: 50th percentile	1.3	1.4	1.5
	75th percentile	3.1	2.6	2.6
	Acute days for each swing day (median)	8.3	4.2	2.2
2006	Number of hospitals	443	21	984
	Swing ADC: 50th percentile	1.3	1.0	1.6
	75th percentile	2.8	2.1	2.6
	Acute days for each swing day (median)	9.1	5.5	2.2
2007	Number of hospitals	449	14	992
	Swing ADC: 50th percentile	1.1	1.3	1.6
	75th percentile	2.8	2.6	2.6
	Acute days for each swing day (median)	9.6	3.1	2.2
2008	Number of hospitals	445	8	999
	Swing ADC: 50th percentile	1.0	1.0	1.6
	75th percentile	2.6	2.8	2.7
	Acute days for each swing day (median)	11.3	6.9	2.2

Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

Swing bed care as a share of acute plus swing bed inpatient days changed little over the period under study. Among CAHs, swing bed care represented 26% of inpatient care in 2008 (up from 23%). Among PPS hospitals the change was unremarkable.

Figure 10. Swing Bed Days as a Share of All Days on Routine Care Units



Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

III. TRENDS IN SWING BED USE IN CRITICAL ACCESS HOSPITALS

One result of the reimbursement regulation change for post-acute skilled care was the implementation of different payment formulas for swing bed care in PPS hospitals and CAHs with CAHs receiving 101% of costs. If and how this reimbursement advantage has affected the use of swing beds in CAH has been a question. Table 4 summarizes changes in swing bed use in CAHs compared to PPS hospitals from 2003 to 2008.

The number of CAHs in micropolitan counties almost doubled from 2003 to 2008. There were more than three times as many CAHs in more rural non-CBSA counties although the rate of growth was smaller. The increase in CAHs is largely due to conversion from PPS status, as can be seen in the decrease in the number of PPS hospitals.

The percent of hospitals with swing bed care decreased in three of the four hospital groups described below and remained essentially unchanged in the fourth group, i.e., CAHs in non-CBSA areas. The total number of swing bed days did increase for CAHs as a group, but for individual hospitals, the average number of days decreased in micropolitan areas and increased by 13.6% in non-CBSAs. A similar change is seen the average daily swing bed census. Swing bed ADC went down in micropolitan CAHs and both groups of PPS hospitals. Swing bed ADC in CAHs increased modestly in non-CBSAs.

Table 4. Changes in Swing Bed Use in CAHs Compared to Use in PPS Hospitals, 2003 to 2008

Critical Access Hospitals	**Micropolitan**			**Non-CBSA**		
	2003	2008	% change	2003	2008	% change
Number of hospitals	119	226	89.9%	567	825	45.5%
% of hospitals w/swing bed care	92.4%	89.8%	-2.8%	95.9%	96.5%	0.6%
Total # of swing days	79,225	132,787	67.6%	349,858	566,231	61.8%
Average # of swing days/hospital	689	616	-10.6%	633	719	13.6%
Average daily swing bed census	1.89	1.69	-10.6%	1.73	1.97	13.9%
PPS Hospitals	**Micropolitan**			**Non-CBSA**		
	2003	2008	% change	2003	2008	% change
Number of hospitals	729	622	-14.7%	593	330	-44.4%
% of hospitals w/swing bed care	36.4%	36.2%	-0.5%	74.3%	69.5%	-6.5%
Total # of swing days	207,696	166,262	-19.9%	318,327	152,294	-52.2%
Average # of swing days/hospital	285	267	-6.3%	539	464	-13.9%
Average daily swing bed census	0.78	0.73	-6.4%	1.48	1.27	-14.2%

Source: NCRHR&PAC analysis of CMS Hospital Cost Report Information System (HCRIS), 6-30-10 release

DISCUSSION AND CONCLUSIONS

This study provides descriptive evidence on current trends in the availability and use of swing beds and SNF services in rural areas. The study updates and extends previous work by Dalton et al.[1] by examining trends during a period of relatively stable reimbursement versus the period of dramatic policy change covered by the previous study. Findings suggest that access to any type of hospital-based post-acute skilled care has changed little for rural residents since 2003; similar numbers of hospitals provided skilled care in 2003 and 2008. However, the type of post-acute skilled care offered by hospitals has changed over the period. Findings reveal a continuing decline in the number and proportion of rural hospitals that operate SNFs, but little decline in the number of hospitals offering any type of skilled care. Hospitals in non-CBSAs, the most rural communities, were least likely to close SNFs, and CAHs appeared less likely than other rural hospitals to divest SNFs.

Swing bed days have also increased as a share of total Medicare hospital post-acute skilled care days. The increase has been driven primarily by hospital-based SNF closures, and is lowest in non-CBSA hospitals. Swing bed days as a share of all days on routine care units of swing bed hospitals has grown slightly more quickly for CAH than non-CAH hospitals; however, this is most likely due to the extremely small inpatient census of CAH hospitals (typically less than 5).

In the case of swing bed care in CAHs, questions have been raised about financial advantage and the motivation to provide swing bed care. The factors considered by hospitals in their decision to convert to CAH status are, no doubt, complex and it is not possible to determine from this study what role swing bed reimbursement played in the decision to convert or in the decision to offer swing bed care. Some trends are clear from the data comparing 2003 to 2008. During this period, the number of CAHs increased but the percent that offered swing bed care did not. The increase in the total number of swing bed days is consistent with an increase in the number of CAHs, and occurred during a period of overall growth in post-acute skilled days in any setting. At the hospital level, there were only modest changes in the average daily census for swing bed care in CAHs. In fact, an increase was noted only in the most rural areas (non-CBSAs) where post-acute skilled care of any type is less available and swing beds play a more important role. After conversion to CAH status, hospitals have been consistent over the five-year period in the provision of twice as many acute care days as swing bed days.

Despite the growth in swing bed days and the number of swing bed providers in rural areas, skilled care provided in swing beds continues to comprise a very small proportion of overall skilled care days when all sources of post-acute care are considered including community-based SNFs, the predominant care setting. In non-CBSAs, swing bed days reflect less than 2% of total skilled care days throughout the study period. Swing bed days are less than 1% of the total in micropolitan areas. Rather, growth in post-acute skilled care is being driven by rising numbers of SNF days, primarily in freestanding, community-based SNFs, reflecting the trend toward closure of hospital-based SNFs. Overall, access to skilled care in rural areas has improved since 2003, with just 0.5% of the non-CBSA population residing in the 11% of counties with no skilled care providers in 2008. However, in 2008, 4.1% of the population in the most rural communities (non-CBSAs) resided in a county where the only access to post-acute skilled care was through swing beds.

A claims-based study of Medicare hospital-based and freestanding post-acute skilled care patients is warranted as a follow up to this study to identify differences in case mix between hospital-based SNF, freestanding community-based SNF, and swing bed patients. Such information is important for understanding the role of swing beds in meeting patient needs as availability of hospital-based SNFs continues to decline.

REFERENCES

1. Dalton, K., J. Park, A. Howard, R. Slifkin. (2005). Trends in Skilled Nursing and Swing-bed Use in Rural Areas, 1996-2003. Working Paper No. 83. North Carolina Rural health Research and Policy Analysis Center. Cecil G. Sheps Center for Health Services Research. Chapel Hill, NC.

2. MedPAC. (2005). Report to the Congress: Issues in a Modernized Medicare Program, Chapter 7, Critical Access Hospitals, June.

3. Fennell ML, Campell SE. (2007). The regulatory environment and rural hospital long-term care strategies from 1997 to 2003. The Journal of Rural Health. 23:1-9.s