

CHAPTER

6

**Medicare's Acute Hospital
Care at Home program**

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Chapter summary

Acute care hospital services are an important benefit for Medicare beneficiaries who need inpatient clinical care or close medical supervision. For many years, hospitals and payers have experimented with providing this care through a modified acute care benefit, referred to as “hospital at home” (HAH), which provides acute care in a beneficiary’s home rather than a traditional stay in a hospital. Proponents of HAH contend that it can provide better care at lower costs to the health care system, though past evaluations of HAH programs have not conclusively demonstrated these outcomes. Concerns about a shortage of acute care hospital capacity during the coronavirus pandemic led CMS to establish the Acute Hospital Care at Home (AHCAH) program in fee-for-service (FFS) Medicare. Though the program was originally set to expire at the conclusion of the coronavirus public health emergency (PHE), the Congress extended the program through December 31, 2024, in the Consolidated Appropriations Act, 2023.

Under the AHCAH program, hospitals apply to CMS to provide the inpatient acute care benefit at home. The AHCAH program waives some requirements of Medicare’s hospital conditions of participation but adds other requirements unique to home care, such as requiring two daily in-home visits by clinical staff. The payment for AHCAH cases is the same as

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the amount Medicare would have paid for an in-hospital acute care stay under the inpatient prospective payment systems (IPPS). Hospitals select the clinical and social criteria for patient inclusion and exclusion based on their judgment of the patients and services that can be safely provided in the home, and CMS reviews and approves the criteria as part of the AHCAH waiver application process.

CMS reported that, as of April 2024, about 23,000 AHCAH discharges have occurred (including both Medicare and Medicaid beneficiaries) and 328 hospitals have been approved to participate. However, past experience suggests that many approved hospitals may not have implemented programs. For example, CMS's data for the AHCAH program in 2022 included 284 hospitals, but only 105 hospitals, or 37 percent, reported at least one discharge under the program. These hospitals reported approximately 6,100 discharges (less than 0.1 percent of all IPPS discharges), for an average of about 59 patients per active hospital. In 2022, AHCAH volume was concentrated among those hospitals, with 26 hospitals accounting for 71 percent of the AHCAH discharges.

Hospitals active in AHCAH in 2022 tended to have higher all-payer patient volume, higher occupancy, and nonprofit ownership status, and they tended to be located in urban areas. The reported rates of patient mortality and escalations from the home to the hospital were low, with unanticipated patient mortality of 0.36 percent and an escalation rate of 7.2 percent, indicating that more than 90 percent of patients remained at home in AHCAH. The two most common diagnoses for AHCAH discharges in fiscal year 2022 were respiratory infection and heart failure.

As noted above, AHCAH generally follows the inpatient hospital conditions of participation, but many aspects of the care model are new and evolving, and hospitals have flexibility to design their programs. The program guidance creates opportunities for experimentation and may ease implementation, but it also means that some aspects are undefined. In interviews with Commission staff, hospitals participating in the AHCAH program noted challenges in getting their programs started. Such challenges included the expiration of the program's statutory authorization on December 31, 2024; start-up costs for new staff and operational infrastructure; gaining institutional support for a new, and often unfamiliar, line of service; hiring or identifying additional staff to operate the program; developing a community-based delivery network for ancillary services such as food, laboratory services, pharmaceuticals, and medical equipment; and gaining clinician support for referring to the program.

In addition, hospitals described experiences with beneficiaries declining AHCAH care (though the rates of patient uptake varied by hospital), citing beneficiary lack of familiarity with the model and distrust.

Though AHCAH probably played a negligible role in increasing hospital capacity during the PHE, the limited uptake likely reflects the implementation challenges that hospitals faced, challenges that may present fewer obstacles as providers gain more familiarity with the model. Whether providing AHCAH is less costly for hospitals than providing conventional brick-and-mortar care is a critical unresolved question that may affect the take-up of the program. The Commission's interviews with hospitals participating in AHCAH found that beneficiaries receive fewer services (such as physician consults and laboratory tests) during an AHCAH stay than during a conventional inpatient stay. Nevertheless, the cost per unit of service may be higher due to the additional costs and inefficiencies of providing care to patients in their homes. Whether AHCAH can provide value to beneficiaries and the Medicare program—through better outcomes and reduced Medicare expenditures for follow-on care—has yet to be conclusively determined.

If the program continues, CMS will want to review many of the aspects of care provided under the program, such as the use of remote patient monitoring, the timeliness of hospital response to urgent care needs, and the substitution of virtual physician visits for in-person visits. Understanding how these factors impact beneficiaries' care may help identify areas where the AHCAH model needs refinement. More important, policymakers will need to consider how to (1) measure outcomes for the program so as to safeguard quality of care; (2) ensure that beneficiaries using AHCAH require that level of care (and not a lower, less costly, level of care, such as that provided by home health agencies); and (3) set FFS payments appropriately. ■

Acute care hospital services are an important benefit for Medicare beneficiaries who need inpatient clinical care or close medical supervision. For many years, hospitals and payers have experimented with providing this care through a modified acute care benefit, referred to as “hospital at home” (HAH), that provides acute care in a beneficiary’s home rather than a traditional stay at a hospital. Concerns about a shortage of acute care hospital capacity during the coronavirus pandemic led CMS to establish the Acute Hospital Care at Home (AHCAH) program in fee-for-service (FFS) Medicare under its emergency authority available for the duration of the public health emergency (PHE). Under this program, hospitals approved by CMS can provide inpatient acute care services in a beneficiary’s home. Though the program was originally set to expire at the conclusion of the PHE, the Congress extended the program through December 31, 2024, in the Consolidated Appropriations Act, 2023. Statute also requires CMS to provide a report to the Congress by September 30, 2024, evaluating the quality, cost, and other aspects of AHCAH.

Assessing the value of the AHCAH program to beneficiaries and to Medicare is critical to inform the program’s future direction. In this chapter, we review the elements of the HAH model, assess the experience of hospitals and Medicare beneficiaries in the AHCAH program, and review considerations for Medicare policymakers. Because AHCAH is a new program, we supplemented analysis of claims data with findings from interviews with six hospitals, one commercial HAH vendor, and one health insurance plan that operate HAH programs. These interviews were conducted in July 2023 through November 2023.

Key elements and goals of the hospital-at-home model

The implementation of AHCAH in FFS Medicare followed several years of experimentation with HAH by Medicare and other payers. HAH programs have long been a feature of health care in other countries, and experimentation in the U.S. began in the 1990s with a demonstration project led by researchers at Johns Hopkins University (Leff et al. 2005, Leff et al. 1999). The components of HAH programs vary significantly, but generally they include the following:

- clinical criteria that define the conditions served by the program (although HAH programs may focus on specific clinical conditions, the severity of the clinical condition must require an acute hospital level of care to qualify for inpatient admission);
- intensive clinical services provided at home in lieu of a stay at a brick-and-mortar hospital, including daily in-home visits by physicians, nurses, or other advanced practice providers (some of these services may be provided virtually);
- in-home provision of the ancillary services typically associated with an inpatient stay, including meals, laboratory services, imaging services, and pharmacy;
- beneficiary on-demand access to clinical staff by telephone or digital means; and
- a defined geographic service area adjacent to the hospital operating the AHCAH program (which facilitates timely response for any urgent care needs).

Though the specific components often vary across HAH programs, they have the same general purpose: identifying patients who are sick enough to qualify for inpatient acute hospital care but are also sufficiently clinically stable that they can be safely served at home with appropriate intensive clinical care. HAH programs also have exclusion criteria to safeguard patient safety. Common reasons for exclusion include the need for critical care (severe acuity and/or need for particularly close monitoring) and the need for imaging and other inpatient services that cannot be provided in the home (Ouchi et al. 2021). Hospitals may also exclude a patient if they determine that the home is in an unsafe condition or that the patient lacks adequate informal support at home (Brigham and Women’s Hospital 2018).

Patients can be referred to HAH programs from a range of clinical settings. A common arrangement is for a patient at a hospital to be referred after an inpatient surgery or visit to the emergency department. However, some payers have also experimented with referring patients from other settings, such as from outpatient clinics and primary care clinics (Cryer et al. 2012, DeCherrie et al. 2019).

There are two common approaches to initiating at-home services in HAH programs: (1) a patient can have an initial overnight stay at a brick-and-mortar hospital and be transferred home to continue their acute inpatient care (often referred to as “early supported discharge”), or (2) a patient can be directly admitted to HAH with no initial overnight stay at the brick-and-mortar hospital and receive all of their inpatient hospital care at home (often referred to as “admission avoidance”). In both approaches, the patient could return to the hospital if a change in condition requires acute care services that cannot be provided in the home. HAH programs are offered as an option to qualifying patients, who may choose to decline HAH services and have a conventional hospital stay instead.

In discussions with hospitals implementing HAH, program staff indicated that they often begin implementing the program by transferring eligible patients home after an overnight stay in the brick-and-mortar hospital. The program then expands into identifying patients in the emergency room who can be directly admitted to HAH without an overnight stay at the hospital. This approach allows referring physicians an opportunity to become more familiar with HAH before admitting directly to the beneficiary’s home, and it allows for a more gradual increase in the workload of the hospital’s network of in-home care providers and vendors. In general, hospitals reported a mix of both types of these cases when their programs were in full operation.

The literature has identified several potential benefits of the model relative to a traditional acute care inpatient stay:

- Beneficiaries are often more physically and emotionally comfortable in the home, which facilitates better rapport and cooperation between patients and medical staff in the development and implementation of care plans (Chua et al. 2022, Levine et al. 2021).
- Care at home can improve medical outcomes by avoiding iatrogenic complications that occur in the hospital or decompensation that can lead to physical and mental functional impairment (Krumholz 2013, Leff 2009).
- HAH can encourage care continuity because it eliminates the need for a transition to a new location after inpatient care (Gorbenko et al. 2023).

- HAH can lower hospitals’ costs of providing acute care and reduce associated FFS Medicare expenditures such as hospital readmissions (Ritchie and Leff 2022).
- HAH can serve as a “safety valve” for overstretched health systems that have insufficient inpatient bed capacity (Gorbenko et al. 2023).

Some observers also contend that the HAH model could advance health equity and address social determinants of health (Truong and Siu 2024). HAH programs, because they can observe the patient in the home, may be better equipped to identify a patient’s health, functional, and quality of life needs and might achieve better outcomes than standard inpatient care (Boone and Shammash 2022). A 2024 review of the initial AHCAH experience found that escalation and mortality rates did not differ significantly across ethnic groups, dual-eligible Medicare-Medicaid beneficiaries, and disabled Medicare beneficiaries (Levine et al. 2024).¹ However, there are still concerns that HAH could exacerbate disparities if it is implemented in ways that avoid low-income or vulnerable beneficiaries if they are perceived as more challenging or costly to serve (Boone and Shammash 2022).

Hospital at home: Two pre-pandemic programs

HAH programs have been studied in the U.S. and abroad. Some studies suggest favorable impacts of HAH on quality of care and other outcomes; however, the strength of the evidence for these findings varies (Arsenault-Lapierre et al. 2021, Edgar et al. 2024). Another challenge in drawing conclusions from earlier studies of HAH programs is that many of them were implemented in other countries, making it difficult to generalize their experience to the U.S. Two early experiences in the U.S., one sponsored by CMS, provide some evidence and illustrate the challenges and complexities of operating and assessing these programs.

CMS-sponsored grant for testing HAH services in New York

In 2014, Mount Sinai Hospital received a Health Care Innovation Award grant from CMS to demonstrate an HAH program, referred to as the Mobile Acute Care

Team (MACT) (Gilman et al. 2020). The purpose of MACT was to test a bundled model in which patients received acute and post-acute care services at home for about 33 days (i.e., an acute care episode at home of about 3 days, on average, followed by 30 days of post-acute care). Patients were recruited from Mount Sinai hospitals, had to live in Manhattan, and had to meet clinical and other program criteria.² Like other HAH programs, MACT provided acute care at home through a combination of nursing services, physician visits, and ancillary services such as meals, pharmacy, at-home imaging, and durable medical equipment. FFS Medicare beneficiaries and patients covered by a participating private insurer were eligible to enroll. FFS Medicare enrollees accounted for about 62 percent of the patients served by MACT.

MACT experienced implementation challenges in recruiting patients and delivering services during the start-up phase. Clinicians reported difficulty in determining whether patients met program criteria, a challenge that may have undercut recruitment efforts, and about one-third of beneficiaries deemed eligible for MACT declined to participate (Federman et al. 2018). The program also experienced difficulties with external contractors providing ancillary services when needed because some outside contractors were not accustomed to providing the after-hours services necessary for MACT patients (Gilman et al. 2020). Mount Sinai made changes to MACT to address these challenges, including refining patient criteria and hiring and training additional staff to administer the program. MACT was also restructured to rely less on external vendors and more on in-house staff to provide ancillary services.

CMS's evaluation of MACT did not include a quantitative analysis of the program's impact (Gilman et al. 2020). The evaluation concluded that MACT's patient selection criteria relied on beneficiary attributes that could not be identified in Medicare claims data, so a control group of brick-and-mortar hospital discharges could not be identified for comparison purposes. In addition, a small number of patients received MACT services, limiting the statistical power of any analysis.

However, clinical investigators involved with MACT conducted an analysis using a control group of beneficiaries who qualified for MACT but did not

receive care through the program—either because they declined to participate or because they were evaluated during periods when the program could not admit new patients (Federman et al. 2018). The analysis found that MACT beneficiaries had a shorter length of stay and a lower rate of readmission compared with the control group. In the 30 days following MACT care, beneficiaries were more likely to use home health care and less likely to be admitted to a skilled nursing facility. HAH patients also reported better pain management, greater satisfaction with the care they received, and greater satisfaction in their communication with physicians and nurses.

However, because patients were not randomized to the study and control groups and because the control group primarily consisted of beneficiaries who were eligible for, but not offered, HAH care, the results may be biased to the extent that patients who might have declined HAH (if given the opportunity) differed in severity of illness or other characteristics associated with outcomes (Liao et al. 2018). A separate study also found that dual-eligible Medicare–Medicaid beneficiaries who received HAH services had better outcomes than those who had received brick-and-mortar care, though this study, similar to the 2018 analysis by Federman and colleagues, is limited because patients were not randomly assigned to HAH (Siu 2022).

A recent small, randomized trial observed favorable outcomes for many HAH patients

A randomized trial of HAH in the U.S. was conducted by investigators at Brigham and Women's Hospital in 2017, which was the most recent U.S. study completed before CMS implemented AHCAH (Levine et al. 2020, Brigham and Women's Hospital 2018). The program directly admitted patients with select conditions to HAH (i.e., there were no initial overnight hospital stays before beginning care at home). Patients were evaluated for HAH while receiving care in the emergency department, and those who met the program's clinical and other criteria were offered services.³ About 37 percent of patients who were offered HAH accepted the service, and these patients were randomized between HAH ($n = 43$) and usual care at the brick-and-mortar hospital ($n = 48$). Patients were recruited from an academic medical center and a community hospital.

Under the program, HAH patients received one physician visit and two nursing visits each day at home,

**TABLE
6-1**

Differences in utilization between the HAH intervention group and the usual care group, as reported by the 2020 BWH study

Measure	Intervention (hospital at home) (n = 43)	Control (usual care in brick-and-mortar hospital) (n = 48)
During acute care episode		
Mean length of stay (95% CI)	4.5 (3.9–5.0)	3.8 (3.3–4.4)
Share of patients (in percent) receiving:		
Intravenous medication during admission	70%	81%
Imaging during admission	14	44
Consultant session during admission	2	31
Physical or occupational therapy session during admission	0	17
Median laboratory orders per admission	3	15
Rate of readmission after acute care episode (in percent)	7%	23%
Disposition after acute care episode (in percent)		
Routine (home with no other services)	65%	67%
Home health	23	31
Home hospice	9	2
Other	2	0
30 days after acute care episode		
Primary care visit ≤ 14 days after discharge	55%	42%
30-day readmission	7	23
30-day ED presentation	7	13

Note: HAH (hospital at home), BWH (Brigham and Women’s Hospital), CI (confidence interval), ED (emergency department). Components may not sum to 100 percent due to rounding.

Source: Levine et al. 2020.

with physician specialists available through telehealth as needed. Patients were also monitored through remote patient monitoring devices, and they could contact the care team through telephone, video, or text messaging for unscheduled care consultations. Home health aide services were available to assist with personal care needs. Ancillary services such as meals, durable medical equipment and medical supplies, pharmaceuticals, and lab services were also provided as necessary.

The study compared outcomes for two groups of patients: an intervention group that received HAH

services and a control group that received care in a standard inpatient hospital. The small sample size limited the statistical power of the study, so although some of the results indicate better performance for HAH, they were not statistically significant (Table 6-1):

- The average length of stay for HAH patients was 0.7 days longer than for the control group.
- HAH patients received fewer services such as laboratory tests and specialty physician consultations, on average.

- In both groups, about two-thirds of patients were discharged home with no other services (i.e., home health or hospice).
- The rate of readmission was lower for HAH patients.
- HAH patients and brick-and-mortar inpatients reported similar rates of patient satisfaction and functional status at discharge, though HAH patients reported less time lying down or being otherwise inactive (not shown in table).⁴
- No patients in the HAH group had to be “escalated” from home to a brick-and-mortar hospital, and no patients died in either group while receiving acute care.⁵

The study also compared risk-adjusted costs for the acute care episode and the 30 days afterward for the two randomized groups of patients, the HAH group and the brick-and-mortar group (the analysis examined provider costs for services and not FFS Medicare’s payments for them and did not include implementation costs).⁶ The analysis found that risk-adjusted acute care costs for the HAH group were 19 percent lower than the brick-and-mortar group (the results were significant with a p -value of <0.001). When the following 30 days of care were included, costs were 25 percent lower for the HAH group, likely reflecting, in part, the lower rate of readmission for HAH patients (the results were significant with a p -value of <0.001).

About two-thirds of patients declined HAH services, and a subsequent analysis identified several factors that affected patient recruitment (Levine et al. 2022b). Patients’ most frequently reported reason for declining the service was that they believed it was easier or safer to remain in the hospital. Patients who declined HAH were also more likely to live alone. The authors observed that patients who were evaluated at a community hospital were more likely to decline HAH programs. Hospital representatives cited similar experiences with patients who declined care and noted that patients’ distrust of or lack of familiarity with the model played a role. One hospital pointed out that many patients arrive at the hospital with an expectation of an in-facility stay, which can make it challenging for patients to consider an alternative.

Hospital at home in FFS Medicare: The Acute Hospital Care at Home program

In November 2020, CMS launched the Acute Hospital Care at Home program. The program waives several conditions of participation for Medicare hospitals: the requirement that nursing care be provided on premises 24 hours a day, 7 days a week, and certain facility requirements.⁷ All other hospital conditions of participation remain in effect. Hospitals seeking to participate in AHCAH submit a waiver to CMS, which reviews it to ensure it meets AHCAH program requirements. Under the waiver application, hospitals must:

- describe the clinical conditions and other criteria that hospitals will apply when determining which beneficiaries may be offered HAH services;
- provide two in-person visits by clinicians each day of service and a daily physician visit that may be virtual or in person (hospitals have the option of using a mobile integrated health community paramedic for appropriate patients, though they must be supervised by a nurse);
- deliver all the clinical and ancillary services at home that a beneficiary may need during their stay, such as durable medical equipment, laboratory services, and pharmacy;
- provide monthly reporting of three metrics for HAH patients—unanticipated mortality, number of AHCAH cases escalated to brick-and-mortar inpatient care, and the total number of AHCAH discharges;
- provide a round-the-clock contact system for patients to reach out to clinicians with questions or concerns; and
- when necessary, provide in-person emergency clinical services at the beneficiary’s home within 30 minutes.

Medicare treats AHCAH services like an acute care hospital stay under Medicare’s inpatient hospital benefit in terms of administrative needs, benefit eligibility, and payment policy, with the exceptions to the hospital conditions of participation noted above. Only acute care hospitals may apply for AHCAH

**TABLE
6-2**

Twenty-six hospitals accounted for 71 percent of all AHCAH discharges in 2022

Number of AHCAH discharges	Number of operational hospitals	Total AHCAH discharges	Share of all AHCAH discharges	Average annual AHCAH discharges per hospital
Six or fewer	27	70	1%	2.6
7-25	24	337	6	14.0
26-74	28	1,162	21	41.5
75-170	15	1,181	21	78.7
171-223	6	1,134	20	189.0
224 or more	5	1,675	30	335.0
Total	105	6,189	100	58.9

Note: AHCAH (Acute Hospital Care at Home). Includes all discharges covered under the AHCAH waiver, which includes Medicaid discharges.

Source: MedPAC analysis of AHCAH data from CMS.

waivers. CMS established an expedited waiver request process for hospitals with prior experience operating HAH services, while hospitals that are starting new programs or have limited experience receive more scrutiny.⁸

Medicare pays the same amount for AHCAH cases that it would pay for a brick-and-mortar hospital stay under the inpatient prospective payment systems (IPPS). The payment is the same for AHCAH cases regardless of whether the stay included an initial overnight stay at the brick-and-mortar hospital or acute inpatient care began at home without a brick-and-mortar stay. An AHCAH case that is transferred from home to the hospital for care is treated as a single discharge (referred to as an “escalation of care”), so Medicare does not make an additional payment when a patient cannot remain in the home.

Volume in the AHCAH program has remained limited

Under the AHCAH waiver, hospitals are required to submit monthly reports indicating the number of patients served, mortality for AHCAH patients, and the number of patients who are “escalated” from home to the hospital because they need a higher level of care. These data are reported through an

online portal that is not validated with other Medicare data, such as claims or enrollment information. As a result, these data reflect the completeness of hospital reporting practices, and they have not been reviewed for completeness or accuracy. In April 2024, CMS reported that over 23,000 discharges had occurred under the AHCAH program (including both Medicare and Medicaid discharges) and 328 hospitals had been approved to participate (Centers for Medicare & Medicaid Services 2024). Separately, CMS reported that from November 21, 2021, through March 20, 2023, the program had served 11,159 patients, with FFS Medicare beneficiaries accounting for about 85 percent of the population (Medicaid beneficiaries accounted for the remaining patients) (Adams et al. 2023).

Data from 2022 suggest that hospitals approved for AHCAH often lag in initiating a program after approval. In 2022, 284 hospitals were participating in CMS’s reporting for AHCAH, though only 105, or about 37 percent, reported at least one discharge. About 6,200 AHCAH discharges were reported in 2022, less than 0.1 percent of all IPPS discharges. CMS reports that, as of early 2024, the number of AHCAH discharges since the program’s inception was over 23,000 (Centers for Medicare & Medicaid Services 2024). The monthly volume of patients receiving AHCAH services in 2022

**TABLE
6-3**

Hospitals that reported providing services through the AHCAH program tended to be larger and nonprofit, FY 2022

Hospital characteristic	Hospital-at-home IPPS hospitals (n = 103)	Other IPPS hospitals (n = 3,190)
Urban location	91%	76%
Teaching hospital	68%	36%
For profit	2%	25%
Median:		
Inpatient beds	314	127
All-payer admissions	16,896	5,320
Medicare admissions	4,089	1,396
Inpatient occupancy	81%	61%
Total (all-payer) profit margin	3.0%	1.1%

Note: AHCAH (Acute Hospital Care at Home), FY (fiscal year), IPPS (inpatient prospective payment systems). We examined 103 hospitals that reported hospital-at-home discharges to CMS and compared those with 3,190 traditional IPPS hospitals that did not report any hospital-at-home discharges. For some variables, the sample was further limited to hospitals with available cost report data.

Source: CMS Acute Hospital Care at Home discharge database, hospital cost reports, and Medicare impact file.

increased from 350 discharges in January to 757 discharges in December, reflecting higher volume as incumbent programs expanded and new hospitals initiated services.

Active AHCAH hospitals, those with one or more reported discharges, had an average of 58.9 HAH discharges in 2022. Even among the 105 active hospitals, relatively few of them accounted for a disproportionate share of the AHCAH volume: The 26 hospitals with the highest AHCAH volume accounted for 71 percent of all program discharges (Table 6-2). Fifty-one of the active hospitals had 25 or fewer AHCAH cases in 2022.

Hospitals active in the AHCAH program in 2022 tended to be located in urban areas and to have higher patient volume, nonprofit ownership status, and higher occupancy than other acute care hospitals (Table 6-3). Patient volume was among the greatest difference: AHCAH hospitals had a median all-payer volume that was 3.2 times higher than other hospitals and median Medicare admission volume that was 2.9 times higher.

The median occupancy rate for AHCAH hospitals was 20 percentage points higher than that of other hospitals, suggesting that AHCAH hospitals may have been under more pressure to relieve facility capacity.

The reported rates of patient mortality and escalations from the home to the hospital were low. For unanticipated patient mortality, AHCAH hospitals reported 22 deaths for 2022, or a rate of 0.36 percent. The rate of escalation was 7.2 percent, indicating that more than 90 percent of AHCAH patients remained at home for the duration of their stay.

Respiratory infection was the most common diagnosis for AHCAH discharges in FY 2022

To better understand case-level trends for AHCAH beneficiaries, we examined claims-level data for fiscal year 2022. In these data, the most common AHCAH diagnosis was respiratory infection with a major clinical complication, followed by heart failure with a major clinical complication (Table 6-4, p. 218). The average

**TABLE
6-4**

Respiratory infection was the most common AHCAH discharge in FY 2022

MS-DRG	Condition	CC, MCC, or no MCC	AHCAH cases (percent)
177	Respiratory infection (e.g., COVID-19)	MCC	16%
291	Heart failure	MCC	11
871	Septicemia	MCC	7
193	Pneumonia	MCC	5
603	Cellulitis (bacterial infection)	No MCC	5
229	UTI	No MCC	4
228	COPD	CC	4
872	Septicemia	No MCC	4
178	Respiratory infection (e.g., COVID-19)	CC	3
194	Pneumonia	CC	3
All other			38

Note: AHCAH (Acute Hospital Care at Home), FY (fiscal year), MS-DRG (Medicare severity–diagnosis related group), CC (complication or comorbidity), MCC (major complication or comorbidity), UTI (urinary tract infection), COPD (chronic obstructive pulmonary disease). MedPAR reported hospital-at-home status through only the middle of fiscal year 2022. Therefore, the percentages of each type of discharge were computed using a sample of 2,962 discharges.

Source: MedPAC analysis of MedPAR data.

length of stay was longer for AHCAH discharges compared with non-AHCAH discharges in the same diagnosis related groups (DRGs) at active hospitals: 6.6 days compared with 5.7 days, respectively (data not shown). The average allowable charge per discharge was 18 percent lower for AHCAH cases compared with non-AHCAH discharges in the same DRGs at active AHCAH hospitals, with allowable charges for laboratory services 23 percent lower and radiology charges 34 percent lower (data not shown). These results indicate that AHCAH discharges have longer stays and lower resource use than the average brick-and-mortar hospital discharge. The lower charges likely reflect that, similar to the findings noted in the Brigham and Women’s Hospital study described above, AHCAH discharges include fewer laboratory and radiology services.

Several factors may explain the lower resource use of AHCAH patients, but it is important to note that program criteria and hospital practices unrelated to AHCAH may affect the comparison. As described earlier, AHCAH programs have eligibility criteria intended to ensure patient safety and screen out

patients who will need more intensive acute care. As a result, within a DRG, the average severity of a non-AHCAH beneficiary who received regular hospital care may be higher than the average AHCAH beneficiary. The lower resource use of AHCAH patients may indicate that hospital clinical criteria direct less severe patients who qualify for inpatient care to in-home care, a central goal of the HAH model. In addition, AHCAH is offered as a voluntary service. Beneficiaries who decline HAH services may have unmeasured needs, which could also contribute to a biased comparison. The higher allowable charges for laboratory and radiology services received by beneficiaries in a brick-and-mortar hospital (usual care) may also reflect overuse of these services during an inpatient stay.

Financial, operational, and regulatory considerations may account for the limited uptake of AHCAH

As with any new line of business for a hospital, the decision to implement an AHCAH program will reflect the local market circumstances and organizational context of an individual hospital. Because these

circumstances vary across facilities, the reasons for the limited uptake likely vary. In interviews with the Commission, hospitals operating HAH programs cited inpatient capacity issues and a belief that HAH would be better care for many patients, though they also noted challenges in getting programs started. In addition to addressing the financial viability of HAH services, hospital staff noted that HAH, while being a valuable service, was not viewed as favorably as other new services that the hospital could consider. Though the Commission did not interview hospitals that were approved by CMS for AHCAH but had not yet started a program, differences in how they evaluated the financial, operational, and regulatory considerations for AHCAH likely affected the decision to implement a program.

Hospitals also vary in the resources they can marshal to address these considerations. However, any new hospital service requires addressing this range of issues. While providing acute inpatient care in the community poses unique challenges that hospitals and regulators may not have considered in the past, the 105 active AHCAH programs under FFS Medicare demonstrate that some hospitals have the resources to initiate a program. AHCAH supporters cite the success of early-adopter hospitals as evidence that implementation challenges can be resolved (Brody et al. 2023).

Financial considerations

The financial impact of AHCAH is a primary consideration for hospitals. In interviews conducted by Gorbenko and colleagues as part of a qualitative analysis of hospitals' AHCAH implementation processes, some hospitals that had not implemented a program indicated that uncertainty about the financial viability of the program dissuaded them from implementation (Gorbenko et al. 2023). The financial impact of AHCAH was reported as uncertain by hospitals that have implemented the program. Some of the hospitals that provided AHCAH believed it was financially viable (i.e., that AHCAH could entail lower costs to deliver care and so would be more profitable under FFS Medicare) but also noted that they had not yet produced definitive data demonstrating that AHCAH was less costly than traditional inpatient care (Gorbenko et al. 2023).

Even if a hospital considers AHCAH financially viable, that conclusion may reflect the local health system's needs, and AHCAH can be attractive to hospitals even

if at-home care is more costly than brick-and-mortar hospital care. AHCAH has been noted as a way for hospitals, particularly those that have a bed shortage, to open up inpatient beds for patients who must be cared for in the facility or who require other services that may be more remunerative (Boone and Shammash 2022). Hospitals with excess inpatient bed capacity likely have less incentive to pursue an AHCAH program. In addition, the interest of Medicare Advantage or other health insurers in covering HAH services may affect a hospital's interest in AHCAH under FFS Medicare. How hospitals view their current inpatient bed capacity, their strategic goals for inpatient services, the interest of other health care payers, and the financial impact of AHCAH relative to usual care will likely affect their decision about whether to implement a program.

Operational considerations

A hospital's administrative and managerial capacity to tackle the operational challenges is also likely to account for some of the variation in uptake. AHCAH requires hospitals to establish new clinical infrastructure and rework existing hospital practices. Hospitals will need to hire or redeploy clinical staff; hire, manage, and oversee external vendors to provide services not available through in-house resources; and extend hospital infrastructure such as electronic health records to work outside institutional settings (Gorbenko et al. 2023). AHCAH requires hospitals to develop a network of couriers and providers that can deliver needed services and supplies on a timely basis to beneficiaries at home. Hospitals will also have to work with physicians who refer patients to inpatient care in order to develop processes for physicians to identify and direct appropriate patients to AHCAH and to provide physician care in the patient's home. Hiring clinical or other staff for a new service line may not be possible for a hospital experiencing staffing shortages in other services. The decision to implement or forgo an AHCAH program will likely reflect the availability of financial resources for new investments, availability of staff, preparedness to construct a community-facing network of clinicians and vendors to deliver acute care in the home, and organizational willingness to redesign existing inpatient admission practices.

Legislative and regulatory considerations

Another factor affecting hospital participation in AHCAH may have been that the statutory authority for

the program expires on December 31, 2024. Hospitals may have been reluctant to invest in a program that did not have a more lengthy authorization in law. Hospitals implementing an AHCAH program must resolve regulatory and licensure issues—in addition to needing Medicare’s statutory authorization—which can be difficult because existing rules often define care based on current models (DeCherrie et al. 2022). Hospitals seeking to establish a program have to consider the range of local, state, and federal regulations that apply to both inpatient and outpatient care and consider how they pertain to the HAH model. Many hospitals have addressed these issues successfully, but implementation efforts can be stymied or halted if regulatory or licensure issues prove difficult to resolve. If it is unclear how regulations apply to AHCAH, regulatory agencies may need to provide flexibility or modify existing requirements.

A primary issue is whether state or local rules permit hospitals to deliver acute inpatient care in a patient’s home. For some hospitals, state regulation may not allow hospitals to operate an AHCAH program, even when permitted by Medicare. Alternatively, regulations may require additional licensure or certification, as in the case of one hospital that had to procure a home health agency license to operate an AHCAH program (Medically Home 2023). Hospitals may also have to consider whether HAH services apply to state certificate-of-need laws that regulate the number of hospital beds.

The use of community paramedics to provide acute hospital care in the home is another example of a regulatory issue that some hospitals will face. Medicare’s AHCAH rules allow the use of community paramedics as an alternative to more costly nurses, but state and local regulations govern the clinical practice of paramedics. The current regulations often reflect the responsibilities of paramedics in emergency medical care, and hospitals may have to work with regulators to modify these strictures to allow community paramedics to provide the services that are required in AHCAH (Medically Home 2023).

Current structure of AHCAH will hinder efforts to compare outcomes for AHCAH to brick-and-mortar hospital care

Measuring outcomes under AHCAH will be challenging since the program is operating as a

voluntary benefit in FFS Medicare and because data limitations will likely make it difficult to examine key aspects of the program that contribute to outcomes. For example, constructing a statistically comparable baseline of AHCAH and non-AHCAH discharges will be challenging because FFS Medicare beneficiaries are not randomly assigned to each service. We would expect AHCAH beneficiaries and non-AHCAH beneficiaries to differ in clinical and social risk factors because of the eligibility criteria used by AHCAH programs, which may consider such factors as housing status, caregiver availability, and clinical acuity. Many of these patient attributes are not captured in claims or other administrative data, making it difficult to construct clinical baseline and intervention groups for evaluation. As noted above, establishing clinical baseline and intervention groups was an issue in CMS’s evaluation of the Mount Sinai Hospital MACT program since that program’s criteria included factors that could not be identified in Medicare administrative data.

Measuring the services that AHCAH patients receive will also be challenging with current data. AHCAH hospitals have the flexibility to select the acute care services they provide under the program.⁹ As a result, the costs of care will likely vary across hospitals because hospitals may have different approaches to delivering care, even for patients with similar characteristics. Current administrative data do not include discharge-level information such as the use of remote patient monitoring and other digital technologies, the number of virtual visits provided by nurses or other practitioners who do not bill Medicare under the physician fee schedule, and the timing and length of in-person visits provided in the home. All of these factors affect the cost and quality of an AHCAH stay, which are important for understanding the impact of the program.

Another key data limitation is that the AHCAH experience will reflect only hospitals that have been active in the program through 2023. As noted earlier, these hospitals are predominantly large, nonprofit teaching hospitals, and so the experience of AHCAH will reflect the capabilities and resources of this cohort, which may not be generalizable to other hospitals.

Although making comparisons to usual care will be challenging, there are several aspects of AHCAH that would benefit from additional analysis.

Performance measurement

The quality measures for AHCAH—unanticipated mortality and escalations to inpatient care—do not provide a direct measure of the care that beneficiaries receive in the home. For example, they do not capture whether beneficiaries are able to contact their care team after hours or the effectiveness of providers in teaching and training beneficiaries about their condition. It is also important to know whether AHCAH patients experience fewer adverse events, such as falls or infections, when at home compared with patients who receive usual care in hospitals. Measuring AHCAHs' impact will require a broader set of measures than the mortality and escalation measures that CMS currently collects; this work could begin by reviewing CMS's current acute care hospital measures to determine whether they can be applied to AHCAH.

Substitution of virtual physician visits for in-person physician visits

AHCAH programs generally use virtual visits to provide physician services, although use varies, and it appears that some programs sometimes provide in-person visits. It would help to understand how increased provision of virtual visits affects outcomes and would help to develop policies to ensure that beneficiaries receive in-person physician services when necessary. One study found that virtual visits could safely substitute for in-person visits in many instances but noted that in-person visits were necessary for several patients (Levine et al. 2022a). Understanding the policies and procedures that hospitals follow in determining the need for in-person or virtual physician visits would permit CMS to assess whether any policy guidance is needed to ensure access to in-person care for beneficiaries.

Addressing health disparities

As noted earlier, there is evidence that AHCAH programs have successfully served low-income beneficiaries and Black and Latino beneficiaries. Additional research could examine whether the geographic service areas, clinical services including

supportive services such as personal care, and social criteria (e.g., housing or availability of informal caregivers) used by AHCAH programs affect their ability to serve populations with health disparities.

Impact on family caregivers

Future research could also assess how AHCAH affects the burden on informal caregivers; depending on how it is implemented, AHCAH could increase or decrease the burden of caregivers. In one respect, AHCAH could increase the burden because it requires caregivers to tend to beneficiaries who would normally be in a facility. Alternatively, AHCAH could be beneficial for caregivers because the care team attending to the beneficiary at home means that the family caregiver does not have to travel to and from the hospital to see their loved one. The caregiver can also receive training and support from the care team. CMS could collect outcome data from family caregivers about their experience during AHCAH, such as the program's effects on their caregiving burden and their working relationship with AHCAH clinicians during a stay.

Use of remote patient monitoring

Remote patient monitoring, which typically involves providing beneficiaries with digital devices that record and transmit vital signs and other health information, has become a common part of HAH care. A better understanding of hospitals' costs of remote patient monitoring under AHCAH, as well as its impact on outcomes, would improve evaluation of the care model. There are no standards for the frequency and intensity of these services during an AHCAH stay, so this research could support discussion of program requirements about remote patient monitoring.

Hospital staff response time to AHCAH patients' urgent care needs

A hospital with an AHCAH program must provide beneficiaries with the means to contact hospital staff immediately if they have an urgent concern, and the hospital must be able to deploy staff to the home within 30 minutes when an emergency health concern arises. The experience of AHCAH to date has not raised significant patient safety concerns, but a 30-minute response time could be problematic for patients experiencing complications at home. CMS may want to examine current hospital practices for meeting these

requirements and, for example, see how the actual response time compares with the 30-minute standard.

Key issues that should be considered in setting future AHCAH policy

FFS Medicare's experience with AHCAH suggests that the clinical model has potential advantages for Medicare beneficiaries. The limited volume and participation to date likely reflect the complexities of creating such a program. If Medicare continues the program, the number of participating AHCAH providers could increase. The low rates of mortality and escalation in AHCAH suggest that inpatient hospital-level care can be provided safely in the home for some patients, consistent with the findings of several reviews of past trials of hospital at home by health services researchers (Arsenault-Lapierre et al. 2021, Edgar et al. 2024). Several policy issues need to be considered, including how to ensure that the program does not overlap with other FFS Medicare services, whether care in the home is more or less costly for hospitals to provide than brick-and-mortar care, and what would be the appropriate payment policy for AHCAH.

Policymakers will want to ensure that AHCAH care does not overlap with or draw patients from other, frequently less costly, home-based services currently available under FFS Medicare, such as home health care, hospice, home infusion, and Part B-covered medical services. The CMS AHCAH waiver requires hospitals to identify the "patient leveling process" that they will follow to ensure that a beneficiary requires an inpatient level of care. Under these processes, a physician's decision to admit a patient for AHCAH relies on the same policy and standards that CMS requires for a standard inpatient admission, such as the "two-midnight" rule (established in 2013 to define inpatient care) and commercially available medical-necessity criteria.¹⁰ However, some literature suggests that physicians' evaluations of a patient's need for inpatient care can differ, so there can be variation in hospital admission practices even with policies and guidelines (Hack et al. 2005, Ouchi et al. 2021). The Commission notes that, as a result, the existing criteria for inpatient admissions may be inadequate to prevent admitting beneficiaries to AHCAH who could be served in other settings.

Concerns about an increase in low-value or unnecessary inpatient hospitalizations under AHCAH

could be reduced if the program were provided under capitated programs such as Medicare Advantage or alternative payment models that hold providers accountable for the total cost of care across all FFS Medicare services. Though AHCAH discharges to date have been few, concerns that AHCAH may draw beneficiaries from other, less costly settings in FFS Medicare may grow if program volume increases.

The AHCAH program requires that a beneficiary be evaluated at a hospital before being admitted to the at-home service, which would be an important safeguard if the program continues. The risk of inappropriate utilization may vary across AHCAH models. The "early supported discharge" model, which includes an overnight stay in the brick-and-mortar hospital before home care begins, likely presents less risk of inappropriate use. By contrast, the "admission avoidance" model, which directly admits patients to AHCAH without an overnight stay, could entail a higher risk of overlap with community-based care (while the beneficiary still has to meet criteria for Medicare benefits, as noted above, these criteria can vary in their application and lead to overlap).

Admitting patients from the community with no hospital visit or overnight stay arguably poses the greatest risk of overlap with other community-based services. Community-based providers would have a strong incentive to screen beneficiaries for HAH care, and the inexact nature of FFS Medicare's criteria for acute hospitalization may allow providers to admit patients they already serve. For example, a nursing home could screen residents for AHCAH and get paid higher rates for individuals already in their facilities (an AHCAH stay would also qualify beneficiaries for a skilled nursing facility stay, which would also increase payments for the facility). Because the AHCAH program does not currently permit beneficiaries to be admitted directly from the community, this risk is not yet an issue for FFS Medicare, but the example illustrates how admitting beneficiaries to AHCAH directly from the community has a greater risk of inappropriate use compared to an approach that requires a hospital visit.

A critical unanswered question is whether providing AHCAH is less costly than brick-and-mortar care. The health services literature and the Commission's interviews with participating AHCAH hospitals indicate that beneficiaries receive fewer services during their

in-home stay compared with beneficiaries in a regular inpatient hospital stay (e.g., fewer physician consults and laboratory tests). However, the cost per unit of service may be higher because of the particular expenses and inefficiencies of providing care in the home. For example, nurses in AHCAH may have lower productivity compared with hospital-based nurses because they will spend time traveling to patient homes as part of their workday. In addition, hospitals that operate AHCAH programs may incur additional costs for remote monitoring services and other enabling technologies that they might not incur otherwise. The available evidence does not conclusively indicate whether the savings from providing fewer services during an AHCAH stay offset higher costs from providing care in the community. Assessing the impact of an AHCAH program's size (number of discharges) on program costs will also be important since the size of an AHCAH program may affect whether the program is less costly for hospitals than usual care. AHCAHs' impact on hospital readmissions and post-acute care may also need to be considered when assessing the costs of care under the program. Lower rates of readmission for AHCAH discharges could offset higher per discharge costs for in-home care.

In the future, policymakers may want to reconsider how FFS Medicare pays for AHCAH services, particularly if volume in the program increases. Under current policy, FFS Medicare pays the same IPPS rate for AHCAH discharges and non-AHCAH discharges. This policy facilitated rapid deployment of AHCAH during the coronavirus pandemic and administrative convenience for hospitals and FFS Medicare. However, the equal rate may not be appropriate if AHCAH discharges do not have the same costs as brick-and-mortar acute care stays. The policy also does not provide a mechanism for FFS Medicare to share in savings if AHCAH is less costly than usual care. Currently, AHCAH accounts for a small share of IPPS discharges, so the impact of the current payment policy's incentives is limited. If AHCAH volume increases, a better understanding of the hospital costs under the program would be appropriate for evaluating AHCAH payment policy. However, as noted earlier, it will be challenging to compare the costs of AHCAH and non-AHCAH discharges. ■

Endnotes

- 1 The study examined data for July 2022 through June 2023 and examined outcomes for several racial/ethnic groups (White, Black, Latino) and Medicare-eligible categories (disabled beneficiaries and Medicare-Medicaid dually eligible beneficiaries).
- 2 MACT clinical conditions included congestive heart failure, chronic obstructive pulmonary disease, dehydration, diabetes, pneumonia, cellulitis, urinary tract infection, and pulmonary embolism. Patients had to be in FFS Medicare or a participating Medicare Advantage plan to be eligible for MACT. The program also required a caregiver to be present in the beneficiary's home.
- 3 The conditions included serious infections (e.g., pneumonia, urinary tract infection), heart failure, chronic obstructive pulmonary disease, hypertension, and atrial fibrillation, as well as the need for anticoagulant therapy.
- 4 These data were collected through digital activity trackers and patient assessment evaluations conducted for this trial.
- 5 In HAH programs, an escalation occurs when a patient receiving care at home experiences a change in condition that requires an overnight stay at the brick-and-mortar hospital.
- 6 The cost analysis adjusted for sex, age, race/ethnicity, education, discharge diagnosis, and comorbid condition count. Categories of cost included direct patient costs such as nurses, aides, therapists, ancillary services, physicians, and other allied professionals who served patients in both groups.
- 7 The statute also waives 42 CFR 482.41, which establishes general facility requirements for hospitals (adequate facilities to treat patients, emergency preparedness, fire safety, building safety, and other facility needs for inpatient care).
- 8 Hospitals that have provided HAH services to at least 25 patients previously may use the expedited process.
- 9 Under the waiver, hospitals must provide the full range of acute care services to any beneficiary at home. However, hospitals may exclude patients from AHCAH who need services a hospital has decided are impractical or inappropriate for the home. For example, a hospital could opt not to provide infusion drugs in the home, and so needing this service would effectively exclude beneficiaries who met other AHCAH requirements.
- 10 Under the two-midnight criterion for coverage as an inpatient stay, a beneficiary must need care at an inpatient hospital for a period that crosses two midnights. If the stay is shorter, any services would be covered as an outpatient observation stay.

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