MILLIMAN REPORT

Hospital at Home: Should Payment Models Focus on the Hospital or the Home?

Comparing Payer Costs for Different Hospital at Home Payment Models

May 2022
Commissioned by AccentCare

Pamela Pelizzari, MPH
Bruce Pyenson, FSA, MAAA
Matt Emery, FSA, MAAA, CERA
Anna Loengard, MD, AccentCare

Milliman


Milliman

Table of Contents

Executive Summary

BACKGROUND

Hospital at Home [HaH] is a health services innovation that delivers essential components of hospital inpatient services to select patients in their home. In response to the COVID-19 Public Health Emergency [PHE], the Centers for Medicare and Medicaid Services [CMS] enabled HaH in the fee-for-service [FFS] Medicare program through reimbursement and waivers of rules as part of their efforts to increase the availability of hospital beds for urgently ill patients and to reduce unnecessary exposure to the risks of hospitalization. Nevertheless, HaH has faced many obstacles and expansion of HaH programs to additional patients and hospitals has been slow.

OBJECTIVE

Assess payer costs under different HaH payment models and their implications for the adoption of HaH.

METHODS

A cohort of patients potentially eligible for HaH was created from the 2018 and 2019 Medicare 5% Limited Data Set [LDS] by applying patient and index admission criteria and extrapolated to all Medicare FFS and Medicare Advantage enrollees. We identified payment models for HaH patients from literature and developed cost of care models for a HaH episode of care split into acute and 60-day post-acute care

RESULTS

Approximately 20,000 potential episodes eligible for HaH were identified, which extrapolates to 825,000 potential annual episodes across FFS and Medicare Advantage enrollees. Two payment models for HaH were identified from the literature, a top-down approach based on the current payments for hospital-based care, and a bottom-up approach separately pricing the elements of non-hospital care that come together for HaH. The top-down approach costs approximately $17,500 per episode and the bottom-up approach costs approximately $10,500.

DISCUSSION

This paper provides a payer financial view of two payment models currently used for HaH programs. Assuming payers use the Medicare reimbursement framework, the bottom-up model costs payers significantly less than the top-down model, predominantly driven by lower acute reimbursement.

CONCLUSION

The right balance between the higher payer cost/health system revenue from the top-down model with the lower payer cost/health system revenue of the bottom-up approach will likely be determined locally, based on the resources and market power of hospitals, home health agencies, and payers.

Background

Hospital at Home [HaH] is a care delivery system that provides hospital-like services to patients in their home HaH includes physician visits, nursing care, monitoring, and other services delivered in the home, and has been used internationally and in the US for decades.[1] Through HaH, patients can avoid common hospital hazards and receive treatment in their home. Studies have shown the HaH model can result in lower mortality and readmissions and higher patient satisfaction compared to traditional inpatient care for certain medical conditions.[2] For example, one small program demonstrated 38% lower direct hospital costs, lower 30-day readmission rates (7% vs 23%), fewer labs ordered, and lower imaging rates relative to similar patients in the hospital.[3] From the payer perspective, HaH can cost less than traditional inpatient admissions.[4,5]

Although there are several demonstration programs and commercial entities promoting HaH, broad expansion by healthcare providers has been slow. Low adoption levels may stem from hospitals' reluctance to forgo admission-based revenue, physician or patient concerns over safety, concerns over the effectiveness of associated telehealth services, and payer reluctance to create an additional category of benefit.[6] The HaH care model diverts patients from emergency rooms or hospital beds to their homes, which may create a conflict for hospitals, who may see high bed occupancy as financially valuable. While a hospital that is nearing 100% occupancy may support HaH to free beds for additional, high-value patients, the hospital's support may waver if its occupancy falls. Another important barrier to scaling HaH had been lack of a payment mechanism for Medicare beneficiaries.[7] However, CMS has recently created reimbursement policies for HaH, which has encouraged advocates.

The COVID-19 pandemic accelerated interest in the HaH care model and allowed existing HaH programs to serve more patients.[8] Early in the public health emergency [PHE], CMS encouraged hospitals to expand use of HaH models through the Acute Hospital Care at Home [AHCaH] waiver program which provided the same payment for HaH "admissions" as for an inpatient admission. Mount Sinai Health System (NY), which has operated a HaH program since 2017, was the first hospital approved for AHCaH in November 2020.[11] As of July 2021, Medicare has approved 144 hospitals for AHCaH, and these hospitals average over 20,000 traditional inpatient admissions annually. Hospitals approved for AHCaH waivers have been almost exclusively in or near metro areas and are predominantly mid-size (100-299 beds) and larger (300 beds) hospitals, with only one rural hospital.[9]

While CMS issued PHE-related reimbursement policies that enable the development of HaH and other innovative services such as telehealth, it is uncertain whether these changes will persist after the PHE.[10]

Beyond Medicare, some private payers paid for HaH. Before the pandemic, Mount Sinai had secured HaH contracts for Medicare Advantage, commercial and managed Medicaid members. They attribute their success with health plans

[1] Rossinot H, Marquestaut O, de Stampa M. The experience of patients and family caregivers during hospital-at-home in France. BMC Health Serv Res. 2019;19(1):470.

[2] Caplan GA, Sulaiman NS, Mangin DA, Aimonino Ricauda N, Wilson AD, Barclay L. A meta-analysis of "hospital in the home". Med J Aust. 2012;197(9):512-519.

[3] Levine DM, Ouchi K, Blanchfield B, et al. Hospital-Level Care at Home for Acutely Ill Adults: A Randomized Controlled Trial. Ann Intern Med. 2020;172(2):77-85.

[4] Leff B, Burton L, Mader SL, et al. Hospital at home: feasibility and outcomes of a program to provide hospital-level care at home for acutely ill older patients. Ann Intern Med. 2005;143(11):798-808.

[5] Cryer L, Shannon SB, Van Amsterdam M, Leff B. Costs for 'hospital at home' patients were 19 percent lower, with equal or better outcomes compared to similar inpatients. Health Aff (Millwood). 2012;31(6):1237-1243.

[6] Orry JM, Eggbeer B. Have hospital-at-home programs finally come of age? Healthcare Financial Management Association. 2021. https://www.hfma.org/topics/financial-sustainability/article/have-hospital-at-home-programs-finally-come-of-age-.html

[7] Reese, EC. Hospital-at-home care promises to reshape healthcare delivery in the United States. Healthcare Financial Management Association. 2021. https://www.hfma.org/topics/hfm/2021/november/hospital-at-home-care-promises-to-reshape-healthcare-delivery-in.html

[8] Cheney C. CMS Home-Based Hospital Care Waiver Called 'Enormous Step Forward'. HealthLeaders Media. 2021. https://www.healthleadersmedia.com/clinical-care/cms-home-based-hospital-care-waiver-called-enormous-step-forward

[9] Levine DM., et al. Early Uptake of the Acute Hospital Care at Home Waiver. Annals of internal medicine. 2021.

[10] Centers for Medicare and Medicaid Services (CMS). CMS Physician Payment Rule Promotes Greater Access to Telehealth Services, Diabetes Prevention Programs. 2021. https://www.cms.gov/newsroom/press-releases/cms-physician-payment-rule-promotes-greater-access-telehealth-services-diabetes-prevention-programs

to buy-in from the plans' medical directors by demonstrating better health outcomes and patient satisfaction and buy-in with their plans' CFOs by offering a discount.[7]

Financial and economic models for HaH generally express costs from a provider standpoint, which might include the cost to the provider organization to deliver services and supplies, overhead, and profit. Many payers do not have clear visibility into provider organization costs, but they have detailed information on the amounts they pay for services and supplies across different care settings, which is the approach we have taken in this article.

Objective

Financial and economic models for HaH generally express costs from a provider standpoint, which might include the cost to the provider organization to deliver services and supplies, overhead, and profit. Many payers do not have clear visibility into provider organization costs, but they have detailed information on the amounts they pay for services and supplies across different care settings, which is the approach we have taken in this article.

Methods

Our financial analysis consisted of the following steps:

- Identify different payment models from the literature to accommodate HaH patients within a payer construct
- Estimate a national cohort of Medicare patients ("eligible cohort") who are like those eligible for the CMS Hospital at Home program
- Build financial models of each using medical claims data
  - Top-down payment model
  - Bottom-up payment model

DATA SOURCES

The eligible cohort was constructed using the 5% Medicare limited data set [LDS] claims files for 2019. The 5% Medicare LDS claims files contain all Medicare paid FFS claims generated for 5 percent of all Medicare beneficiaries in the U.S. for all services.

The 5% Medicare LDS claims files include diagnosis codes, procedure codes, and diagnosis-related group [DRG] codes, along with site of service information including provider IDs. The data also provides monthly eligibility data for each beneficiary including demographics, eligibility status, and an indicator for Health Maintenance Organizations [HMO] enrollment.

In addition to the Medicare LDS claims files, we also estimated certain fees from publicly available sources, such as Medicare fee schedules and MedPAC data books, as well as the literature

MEDICARE'S HOSPITAL AT HOME MARKET SIZE

We selected a national eligible cohort of Medicare beneficiaries with inpatient admissions occurring between January and October 2019. We applied patient eligibility and index admission criteria (see Table 1) to identify lower acuity hospital admissions as potential candidates for HaH episodes. The admission criteria are like the inclusion criteria used by Mount Sinai's program.[11]

[11] DeCherrie, LV, et al. Hospital at Home services: An inventory of fee-for-service payments to inform Medicare reimbursement. Journal of the American Geriatrics Society. 2021.

TABLE 1: CRITERIA TO IDENTIFY PATIENT POTENTIALLY ELIGIBLE FOR HAH

PATIENT CRITERIA	
Enrollment	Continuously enrolled in Medicare FFS, both Parts A and B during 2018 and 2019
Age	Age 18 or older as of 2018
INDEX ADMISSION CRITERIA	
MS-DRG	See Appendix 2 for specific medical MS-DRGs
Length of Stay	Length of stay from 1 to 5 days
Skilled Nursing Facility stays	Exclude patients identified with skilled nursing facility (SNF) stay immediately prior to admission (i.e., admitted to the hospital directly from a SNF)
Index Period	Admissions discharged 1/1/2019 through 11/2/2019
Intensive Care Unit (ICU) treatment	No evidence of ICU treatment during the inpatient admission
Dialysis services	No evidence of receipt of dialysis services during the inpatient admission
Nursing facility stays	Exclude patients identified as nursing facility (NF) residents pre-discharge (within prior 12 months)
Death	Patient did not die within 60 days following index admission discharge
Index admission period*	Admission is not within 60 days of a prior index admission
EXCLUDED SERVICES	
Endoscopic procedures	Patients with endoscopic procedures identified by MS-DRG 392 were removed
EXCLUDED EPISODES	
Allowed cost	Episodes with $0 allowed cost have been removed

Note: * Admissions that begin within 60 days of a prior index admission are included as expenditures of that prior index, and these admissions are ineligible as index admissions.

We extrapolated the population from the 5% sample to total Medicare by annualizing index admissions to a full year, multiplying by 20 to reflect 100% of FFS Medicare (from the 5% CMS LDS), and adding Medicare Advantage lives under the assumption that Medicare Advantage lives had the same portion of eligible patients as FFS.

PAYMENT MODELS FROM LITERATURE

We identified two payment models in the literature to treat patients through HaH.

- **Top-down** payment model - Structured similarly to how hospitals are paid for admissions today, a Diagnostic Related Group (DRG) payment based on a patient's diagnosis and severity (facility charge) and professional payments for evaluation and management [E&M] and other services provided by physicians and nurses. The top-down payment model is consistent with how hospital-focused sponsors approach reimbursement. The CMS waiver program, AHCaH, has created a platform for this payment model during the PHE.[12]
- **Bottom-up** payment model – CMS reimbursement for traditional home health (HH) services is based on a Home Health Related Group [HHRG] based on a patient's condition and severity, similar to, but smaller than, the average hospital DRG payment. Services or equipment not covered by the HHRG, such as DME or meals, may be billed a la carte. Physicians may continue to provide professional services, and these would be accounted for similarly to the hospital-based payment model. The bottom-up payment model is consistent with how HH agencies receive

[12] Centers for Medicare and Medicaid Services (CMS). Acute Hospital Care at Home Frequently Asked Questions. 2021. https://qualitynet.cms.gov/acute-hospital-care-at-home/resources#tab2

reimbursement. HH agencies have not traditionally provided hospital-level care, but organizations in the HH industry have expressed interest in the Hospital at Home service.[13,14,15]

TOP-DOWN AND BOTTOM-UP PAYMENT MODEL COMPONENTS

Acute care provided under each model consists of an acute payment (DRG/HHRG), a professional services payment, and additional al-la-carte payments for separately billable services for the bottom-up approach. Physicians and healthcare practitioners are reimbursed for their services and procedures based on Current Procedural Terminology [CPT] codes, a uniform medical coding language to streamline reporting, increasing efficiency and accuracy. The amount of reimbursement for a given CPT code depends on the level of intensity and duration of the service provided, measured by levels I-IV, with higher levels indicating increased intensity and duration. We assumed the acute portion of the typical HaH service was 4 days, and therefore estimated the professional service payment based on 4 visits.

For the top-down model, we estimated the acute facility payment as the eligible cohort episode-weighted average DRG payment, consistent with how AHCaH-approved hospitals are paid during the PHE. Professional visits consisted of a level II new patient or established patient initial hospital visit and 3 subsequent level II hospital visits. See Appendix 1 for detailed CPTs and national average costs for professional services.

We estimated the bottom-up costs as the sum of:

1. 2019 Home Health Related Group [HHRG] blend of a 30-day and 60-day episode[16]
2. Professional service costs
3. An emergency department [ED] visit
4. Other required services not included in the above categories.

We applied an average HHRG reimbursement as a blend of the national average 30-day and 60-day HHRGs to reflect different patient needs. We assumed that the portion of eligible patients who historically did/did not receive home health services after discharge would need services consistent with the 30/60-day HHRG, respectively. This resulted in a 70%/30% weighting of the two HHRG reimbursements in our model.

Professional service costs were estimated as the sum of a level IV new patient home visit plus 3 subsequent level IV home visits (see Appendix 1 for additional detail) based on a 4 acute day HaH service, as in the top-down model.

We estimated the average cost of an ED visit, hospital bed, and other Durable Medical Equipment [DME]/other equipment based on published HaH estimates from Mt. Sinai's submission to the Physician-Focused Payment Model Technical Advisory Committee [PTAC] approval request and trended to 2019.[17]

The bottom-up approach also included tailored patient meals, customized by a dietitian to a patient's medical needs. To estimate tailored meals, we made a pro-rata estimate of the acute portion (4 days) of a 20-day tailored meal plan for dually eligible Medicare and Medicaid beneficiaries and trended to 2019. We estimated that 25% of HaH patients would receive tailored meals.[18]

We calculated the post-acute costs for the top-down model as the average 60-day cost post-discharge from the eligible cohort. We similarly calculated the post-acute costs for the bottom-up model, except we excluded home

[13] Centers for Medicare & Medicaid Services (CMS). Medicare Home Health Agency Utilization By State. 2020. https://www.cms.gov/files/document/cy-2020-medicare-home-health-utilization-state.pdf. Accessed December 11, 2021.

[14] Landers S, Madigan E, Leff B, et al. The future of home healthcare: a strategic framework for optimizing value. Home Health Care Manag Pract. 2016;28(4):262-278.

[15] Crowley, Christopher, Stuck, Amy, et al. Survey and chart review to estimate Medicare cost savings for home health as an alternative to hospital admission following emergency department treatment. 2016. https://www.jem-journal.com/action/showPdf?pii=S0736-4679%2816%2930552-2.

[16] Centers for Medicare and Medicaid Services (CMS). Home Health Prospective Payment System (HH PPS) Rate Update for Calendar Year (CY) 2020. Medicare Learning Network. 2020. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HomeHealthPPS.

[17] Charney DS, Sui A. "HaH-Plus" (Hospital at Home-Plus): Provider-Focused Payment Model. Icahn School of Medicine at Mount Sinai. 2017.

[18] Berkowitz SA, Terranova J, Hill C, et al. Meal delivery programs reduce the use of costly health care in dually eligible Medicare and Medicaid beneficiaries. Health Affairs. 2018; 37(4), 535-542.

health costs, as those would be covered under the HHRG, and excluded SNF costs, as it is unlikely that patients appropriate for a home hospitalization would regularly require SNF care in the immediate post-discharge period.

Results

We identified 21,648 episodes of care potentially eligible for HaH in the 5% LDS, which we extrapolated to represent 825,522 potential episodes across FFS and Medicare Advantage beneficiaries. Table 1 shows the development of the number of eligible episodes from 5% of FFS LDS and extrapolation to the entire Medicare population.

TABLE 2: WATERFALL OF POTENTIALLY ELIGIBLE PATIENTS AND TOTAL EPISODES ELIGIBLE FOR HAH ACROSS MEDICARE

PATIENT EPISODE WATERFALL

STEP	CRITERIA	ENROLLMENT	% RETAINED
0	Enrolled in 2018 and 2019 FFS 5% LDS Data	3,361,177	100.0%
1	Continuously enrolled in Medicare FFS 5% LDS Data, both Parts A and B during 2018 and 2019, non-HMO, non-ESRD, 18+ as of 2018	1,362,327	40.5%
STEP	**CRITERIA**	**EPISODES**	**% RETAINED**
2	All 2019 admissions among patients meeting enrollment criteria	427,935	100.0%
3	After removing patients not meeting MS-DRG criteria (see Appendix 2)	45,458	10.6%
4	After removing patients with lengths of stay less than 1 day or greater than 5 days	36,895	8.6%
5	After removing patients identified with skilled nursing facility (SNF) stay immediately prior to admission (i.e., admitted to the hospital directly from a SNF)	36,078	8.4%
6	After remove admissions discharged after 11/2/2019 to allow for 60 days of post-acute care follow up	29,798	7.0%
7	After removing patients with ICU treatment during the inpatient admission	29,357	6.9%
8	After removing patients receiving dialysis services during the inpatient admission	29,097	6.8%
9	After removing patients identified as nursing facility (NF) residents pre-discharge (within prior 12 months)	24,253	5.7%
10	After removing patients that died 60 days following index admission discharge	24,230	5.7%
11	After removing admission within 60 days of a prior index admission	23,068	5.4%
12	After removing patients with endoscopic procedures with MS-DRG 392	22,648	5.3%
13	After removing episodes with $0 allowed cost have been removed	21,648	5.1%

BUILD-UP OF TOTAL POTENTIAL MEDICARE HAH EPISODES IN 2019

STEP	CRITERIA	CALCULATION	EPISODES
1	Annualization of 305 days of admissions over 365 days a year	365/305 x 21,648 episodes	25,907
2	Extrapolation to 100% of FFS episodes from 5% FFS LDS	20 x 25,907 episodes	518,132
3	Estimated total Medicare episodes including Medicare Advantage (which accounts for about 37% of Medicare enrollees with both Parts A and B) [2.]	159% x 518,132 episodes	825,522
	Estimated Total Potential Medicare HaH Episodes in 2019		825,522

TABLE 3: DESCRIPTION OF EACH PAYMENT MODEL TO TREAT HAH PATIENTS

	TOP-DOWN PAYMENT MODEL	BOTTOM-UP BASED PAYMENT MODEL
CONCEPTUAL CONSTRUCT	Moves essential services from hospital to home to avoid an admission as an inpatient at a hospital.[19]	Enhances home health care by providing more intense care and additional support services to treat patients who might otherwise be admitted to as an inpatient at a hospital.[24]
CURRENT MEDICARE PAYMENT	Part of the expanded CMS Acute Hospital Care at Home model that explicitly grants hospitals the flexibility to provide acute care at home and be reimbursed at FFS rates.[20] Physician services are separately billable, as is true during inpatient hospitalizations outside of the HaH program.	Medicare pays a home health resource group (HHRG) case rate based on clinical and functional status under the home health prospective payment system but also separately billable additional support services (physician visits, DME, etc.).[22] To be paid on an HHRG basis, patients must be homebound.
ELIGIBLE PATIENTS	Beneficiaries who would otherwise be treated with an inpatient hospitalization. Not intended for those already stable in nursing or assisted living facilities.[21]	
PATIENT FLOW	Appropriate patients would be offered HaH as an alternative to inpatient hospitalization during an emergency room visit.	
IMPLEMENTATION	Hospitals may establish their own programs or form joint ventures with third parties (companies such as Contessa, Medically Home, etc.) specializing in treating patients at home to help operate the program and negotiate payment rates with insurers and other payers.[22]	Does not qualify for the CMS waiver program. A bottom-up program requires close coordination between home health agencies and hospitals to ensure that appropriate patients are seamlessly identified and shifted to HaH.[20]
REQUIREMENTS TO PARTICIPATE	**Key Requirements to Participate under AHCaH[23]** ▪ Patient must be admitted from ED or IP bed ▪ Requires daily input from a multidisciplinary team: At least 1 daily physician visit, 1 daily evaluation form a registered nurse (RN), and at least 2 daily in-person visits from a RN or mobile integrated health paramedic ▪ Capability of immediate, on-demand remote audio connection with an AHCaH team member with immediate access to an RN or MD ▪ Provisions for 24-hour coverage with ability to respond to a decompensating patient within 30 minutes ▪ Urgent access to hospital-based diagnoses, if required (e.g., endoscopy, radiology, cardiology) ▪ Patient leveling process to ensure only patients requiring an acute level of care are treated	**Flexibilities when not under AHCaH** ▪ While patients would often be admitted based on an ED-based assessment, this is not a requirement, and thus patients do not have to be admitted from an acute setting and may be referred by their primary physician still from the comfort of their home. A drawback is that home health agencies are dependent on referrals to identify patients.[24] ▪ Fewer requirements on frequency of visits and skill level of care each day than the top-down model

The top-down and bottom-up models we identified do not differ in the types of patients treated but have different payment methodologies. Table 2 describes both the top-down and bottom-up models.

[19] Aronson, S, et al. Acute Care Delivery at Home. Healthcare Emergency Preparedeness Information Gateway - Technical Resources, Assistance Center, and Information Exchange (TRACIE). 2021.

[20] Johnson EE. Acute Care Reimagined: Home Hospital Care Can Support the Triple Aim and Reduce Health Disparities. Journal of Healthcare Management. 2021; 66(4), 258-270.

[21] Jaklevic MC. Pandemic Boosts an Old Idea—Bringing Acute Care to the Patient. JAMA. 2021; 325(17), 1706-1708.

[22] Siu A, DeCherrie LV. Inside Mount Sinai's Hospital at-Home Program. Harvard Business Review. 2019.

[23] Centers for Medicare and Medicaid Services (CMS). Acute Hospital Care at Home Program Approved Hospitals as of 04/05/21. https://www.cms.gov/files/document/covid-acute-hospital-care-home-program-approved-list-hospitals.pdf

[24] Donlan A. 'The Waiver Program Is Tough': Issues with the CMS Hospital at-Home Program. Home HealthCare News. 2021. https://homehealthcarenews.com/2021/10/the-waiver-program-is-tough-issues-with-the-cms-hospital-at-home-program/

FINANCIAL ESTIMATES OF TOP-DOWN AND BOTTOM-UP MODELS

Table 3 shows the development of payer costs for the top-down and bottom-up models. The total payer cost under the top-down model was $17,477 per episode compared to $10,413 per episode for the bottom-up model. The bottom-up approach would save a payer approximately $7,000 per episode according to our analysis.

The average acute care cost under the top-down model was $8,632 per episode compared to $3,792 under the bottom-up model, yielding a payer savings of $4,840 under the bottom-up model for acute care. The cost difference is driven by the larger acute DRG payment of $8,281 in the top-down model relative to the average HHRG bottom-up payment of $2,205. The additional component costs of the acute bottom-up model are higher than the top-down model by $1,235 ($1,235 = ($3,792 - $2,205) – ($8,632 - $8,281)) but still less than the difference of the DRG and HHRG payments ($8,281 and $2,205).

TABLE 4: TOP-DOWN AND BOTTOM-UP PAYMENT MODELS

	TOP-DOWN PAYMENT MODEL		BOTTOM-UP PAYMENT MODEL		
	AVERAGE ALLOWED PER EPISODE	% OF TOTAL PER EPISODE	AVERAGE ALLOWED PER EPISODE	% OF TOTAL PER EPISODE	CHANGE FROM TOP-DOWN
ACUTE CARE					
Acute DRG/HHRG Payment	$8,281	47.4%	$2,205	21.2%	($6,075)
Professional Services	$352	2.0%	$717	6.9%	$365
Initial ED Visit			$749	7.2%	$749
Separately Billables Services During Acute Stay					
Hospital Bed	-	-	$69	0.7%	$69
Other DME/Equipment	-	-	$34	0.3%	$34
Meals	-	-	$18	0.2%	$18
Acute Total	$8,632	49.4%	$3,792	36.4%	($4,840)
POST-ACUTE CARE (60 DAYS POST ADMISSION)					
Readmission Inpatient Facility	$3,286	18.8%	$3,286	31.6%	$0
Skilled Nursing Facility	$1,438	8.2%	$0	0.0%	($1,438)
Home Health	$787	4.5%	$0	0.0%	($787)
Hospice	$93	0.5%	$93	0.9%	$0
Outpatient Facility	$1,358	7.8%	$1,358	13.0%	$0
Professional Services	$1,771	10.1%	$1,771	17.0%	$0
Durable Medical Equipment	$111	0.6%	$111	1.1%	$0
Post-Acute Total	$8,845	50.6%	$6,620	63.6%	($2,225)
Total Average Episode Cost to Payer	$17,477	100.0%	$10,413	100.0%	($7,065)

Discussion

This article provides a payer view of two payment models currently operating for HaH programs. The top-down model is based on the corresponding Medicare DRG inpatient payment, while the bottom-up model is based on the Medicare HHRG payment for home health care. We found that, assuming Medicare-like reimbursement rates, the bottom-up model would cost payers about $7,000 less per episode than the top-down model. Site of service differentials in provider reimbursement, such as those in a hospital-based setting compared to a provider-based office

are a well-known driver in higher healthcare costs.[25] The bottom-up payment model for HaH potentially allows payers to benefit from lower payment rates in the home setting.

Before the PHE, Medicare did not have payment mechanisms for the full set of services provided by HaH programs to patients in their homes. A CMS waiver program for HaH adopted during the PHE is similar to the top-down approach. Under the waiver, the patients treated at home using the CMS waiver must be admitted from the ER or an inpatient bed. Also, the waiver requires that the patient receives at least one daily in-person nurse visit and an additional daily in-person or telehealth physician visit.[23]

The bottom-up approach is based on the existing CMS HHRG payment for a 30-day or 60-day episode of home health care. The Medicare HHRG has no requirement that patients be admitted from the ER or a minimum number of daily visits. Instead, a patient's care is based on a plan of care which specifies the type of professional providing care and frequency of visits as determined by the treating physician or allowed practitioner.[26]

Operators of HaH programs note that some suitable patients could be admitted directly from the community, which would avoid the risk and expense of an emergency room visit, and some existing HaH programs do offer direct admission to HaH services within some Medicare Advantage plans.[7] For admissions to skilled nursing facilities, Medicare Advantage plans are also allowed to have looser criteria than Medicare FFS, and they may admit patients to SNF without the prior 3-day hospital stay required by the Medicare FFS program. Certainly, payers would want to manage the risk that HaH programs do not serve patients who do not require HaH (or inpatient) care. Payers would likely want to develop some form of medical management or medical necessity criteria for HaH to ensure appropriate utilization of the services.

There is some evidence that the choice of payment model may affect the uptake of HaH. The MultiCare Health System in Tacoma, Washington administered both the top-down model under the CMS waiver program and a bottom-up advanced care program and found the top-down approach had a 25% percent patient acceptance rate for HaH, while the bottom-up approach acceptance rate was 98%. Higher acceptance of the bottom-up approach was attributed to the ability of that model to offer HaH to patients before they have left the comfort of their home.[24]

Because of the overhead costs of running HaH, having a sufficient scale of operations is important to the success of an HaH program. A stable flow of patients and sufficient volume is needed. Although we found that about 5% of Medicare admissions, or about 825,000 patients annually, are potential HaH candidates across Medicare beneficiaries, it may still be challenging for an individual hospital to support an HaH program based on its own admissions. For example, despite the availability of AHCaH reimbursement from Medicare, only one hospital in a rural geography enrolled in the program, which reflects the low patient volume and limited resources in rural areas.[7] Outside of rural areas, the potential volume for HaH would be larger if competing hospitals collaborated, or if an independent agency served multiple hospitals. Serving commercial and Medicaid patients as well as Medicare patients would also provide scale.

Before the pandemic, the primary purchaser of HaH services was private payers including Medicare Advantage plans, managed Medicaid organizations, and commercial health plans, but interest has expanded to Accountable Care Organizations [ACOs] who bear risk for the performance of defined Medicare fee-for-service populations.[11] In October of 2021, the CMS Innovation Center [CMMI] announced a strategy refresh for approaches to provide Medicare beneficiaries high quality, low-cost care. Their first objective is to have all Part A and B beneficiaries obtain care from entities accountable for quality and total cost of care by 2030, along with most Medicaid beneficiaries.[27] Providers accepting risk for quality and total cost of care may have increased incentives to use HaH as an alternative to more expensive inpatient admissions. The use of HaH by ACOs is not clear. Certainly, the scale issue mentioned above applies to ACOs.

[25] American Medical Association (AMA). Report 4 of the council on Medical Service (I-18). The Site-of-Service Differential. 2018. https://www.ama-assn.org/system/files/2018-12/i18-cms-report4.pdf

[26] Centers for Medicare and Medicaid Services (CMS). Medicare Benefit Policy Manual Chapter 7 - Home Health Services. 2021. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/bp102c07.pdf

[27] Centers for Medicare and Medicaid Services (CMS). Medicare Benefit Policy Manual Chapter 7 – Home Health Services. 2021. https://innovation.cms.gov/strategic-direction-whitepaper

If CMS extends the AHCaH payment structure beyond the PHE, it may reduce the rates paid per HaH patient below current levels. If CMS reduces its AHCaH payment rates, hospitals with their own HaH programs may discontinue or restructure their programs or seek new patient volume to make up for lost revenue from diverting inpatients to HaH. One option is for hospitals bundled risk to contract with vendors, similar to Mount Sinai Health System's arrangement with Contessa[22] or Atrius Health's arrangement with Medically Home.[28] Another option is to expand the payment model to include risk for additional services, thus driving up the total financial value of the program to payers. The 2017 Mount Sinai HaH Alternative Payment Model (APM) PTAC proposal featured a discounted DRG base payment and a 30-day post-acute transitional care bundled payment at fee-for-service rates, with reconciliation and shared savings on total 30-day spending. Bundled risk arrangements may provide increased revenue to HaH operators but may also create additional complexity when scaling HaH programs.[13] While HaH received a boost during the PHE, HaH's ability to divert patients from the ED and its potential cost savings and quality improvements will likely generate attention from healthcare providers, payers, and especially patients after the PHE.

There are several important limitations to this analysis. These results are largely based on analysis of the 2019 Medicare 5% Limited Data Set [LDS]. Different methodologies, data sources, assumptions about potential HaH patients, and time periods will produce different results. Our models assume Medicare fee levels, and private payers could adopt reimbursement structures based on other fee levels. We note that HaH payment rates under the CMS waiver program may change (or be discontinued) after the current PHE.

We did not consider recent proposed legislation that may impact the design and implementation of Medicare home-based care models, such as the Choose Home Care Act of 2021. This Act would provide an enhanced home-based extended care benefit option for patients leaving the hospital that would otherwise end up in a skilled nursing facility.[29] Some of the expanded services are not included in the HaH financial models discussed here, such as transportation, home modifications, and personal care services. These additional services may make the HaH program more appealing and accessible to providers and patients but would increase costs beyond those in our analysis.

Our payer-focused analysis is based on national averages, and we did not consider local differences in payment rates, however we do not expect the relationship between cost of the top-down and bottom-up models to be materially different by region. We also did not examine other potential payment models or the cost to a hospital or home health agency to operate HaH. Future research that examines the cost structure of a HaH program from the provider perspective will help inform providers interested in sponsoring HaH programs.

[28] Medically Home. About Our Partners—Atrius Health. 2019. https://www.medicallyhome.com/about-our-partners-atrius-health/

[29] National Association for Home Care & Hospice. Choose Home: Legislation to Allow America's Seniors to Come Home Safely After a Hospitalization. 2021. https://www.nahc.org/wp-content/uploads/2021/07/Choose-Home-Factsheet.pdf

Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

milliman.com

CONTACT

Pamela Pelizzari
pamela.pelizzari@milliman.com

Bruce Pyenson
bruce.pyenson@milliman.com