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Memorandum

Date: January 26, 2021

To: Joanne Cunningham & the Regulations Team
Partnership for Quality Home Healthcare

From: Al Dobson, Alex Hartzman, Kimberly Rhodes, Sung Kim and Joan DaVanzo

Subject: Choosing Home Care Act Savings Estimate

The Partnership for Quality Home Healthcare (PQHH) commissioned Dobson DaVanzo & Associates to estimate the budgetary impact of the *Choose Home Care Act of 2020* legislative proposal. This proposal would expand home health services to qualifying Medicare Fee For Service patients following discharge from an acute hospital. This expanded home care benefit is explicitly intended to substitute for institutional services currently provided in Skilled Nursing Facilities (SNFs), particularly for relatively low-acuity patients who may prefer to receive care in their place of residence; this add-on service is referred to as Home-based Extended Care Services (HECH) throughout this memo. To enable a safe transition from hospital to home, the expanded home care service would provide up to 24-hour care and medical supervision for as much as 360 hours over a 30-day episode.

Information applied in this project came from three sources: 1) The draft text of the *Choose Home Care Act of 2020*, 2) the CACEP2 claims and functional assessment study database, 3) 2020 preliminary claims data and 4) the Congressional Budget Office 2020 Medicare baseline.

Overall, we estimate that the proposed legislation could generate Medicare savings of $144-247M per year (approximately 6.5-11.1% of SNF 1st PAC payments), with $1.6-2.8B in savings over ten years. In simulations, HECH episodes tend to generate savings when substituting for SNF care as payment rates are not reflective of facility costs. Total savings estimates are reliant on 1) the volume of current SNF cases to be substituted by HECH, 2) assumptions about how many hours of medical supervision would be required for patients substituting out of SNF care and 3) the relative costs of care under the HECH add-on with HHA care substituting for SNF care. We limited included SNF cases to represent relatively

low-acuity, short length of stay cases for beneficiaries who would likely not qualify for IRF or LTCH care, and who have indicators suggesting caregiver support or strong family care involvement – i.e. the current SNF patients who appear most suitable to substitute a home health episode with HECH add-on for a SNF stay.

The current Medicare home health benefit offers limited services relative to the HECH add-on or institutional settings. We did not assess pent-up demand for the HECH add-on among current post-acute home health cases that may be currently paying out-of-pocket for private home duty nursing and aides (or utilizing uncompensated informal caregiving) that would be covered under the add-on.

Interpretation of Choose Home Care Act of 2020

The *Choose Home Care Act of 2020* describes the intent, case requirements, and payment rates for the expanded "SNF at home" service, referred to as the HECH add-on for purposes of this memo. The HECH add-on service would be provided by participating Medicare certified Home Health Agencies in addition to a concurrent 30-day home health episode.

PURPOSE:

The purpose of *Choose Home Care Act of 2020* is to "improve extended care services and supports under the Medicare program in order to:"

> "(1) provide eligible individuals with skilled care needs and functional limitations the option to choose care in the home to maintain their independence; (2) create choice for individuals and families who prefer to avoid an institutional setting and potential for increased exposure to infectious disease; (3) alleviate burdens on family caregivers and provide in-home support services to individuals with limited caregiver supports; (4) allow eligible individuals to choose recovery in their own home upon discharge from a hospital setting; and (5) reduce Medicare beneficiary and program spending by allowing more beneficiaries to recover in a lower-cost setting."

LIMITATIONS:

The HECH add-on benefit is limited in several critical regards: 1) it may only be applied for one 30-day episode immediately following acute hospital discharge and 2) though it is a 30-day benefit, users may exhaust available hours as early as day 15 if they require 24-hour supervision and assistance, at which point no additional hours (beyond the standard concurrent home health episode) would be paid for by the model. Thus, cases that would require greater than 12 hours a day of care may exhaust the benefit before the 30-day episode period is complete.

CASE REQUIREMENTS:

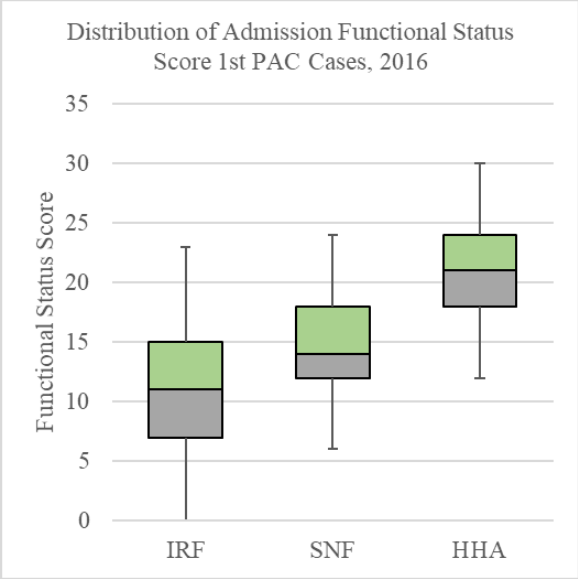
- HECH care occurs concurrently with a HHA episode following acute hospital discharge.
- Beneficiary may otherwise qualify for a SNF stay (e.g., 3-day hospitalization).
- Beneficiary may not qualify for service by an inpatient rehabilitation facility (IRF) or a long-term care hospital (LTCH).

While Medicare Conditions of Participation partially govern which patients are eligible for care in each setting, SNF, IRF and LTCH eligibility criteria do overlap, with patients, their families, providers and discharge planners working together to choose an appropriate post-discharge care setting. For example, typically a beneficiary in an acute care hospital must have a 3-day acute care hospitalization prior to SNF admission to qualify for admission to this setting; this is also typical of IRF and LTCH patients though not required. LTCH patients generally must spend at least 3 days in the Intensive Care Unit, which we were able to identify in claims (in addition to other requirements of the LTCH stay itself). We applied available functional status data and recent findings on patient overlap across PAC settings (not yet published) to remove SNF cases that could potentially be eligible for IRF.

IRFs and SNFs sometimes compete for similar post-acute case-mix groups. In a prior study (not yet published), we constructed a composite tool to compare patients' functional impairment status (as measured in OASIS, MDS 3.0 and IRF-PAI). This tool reoriented and rescaled assessment scores for six core activities of daily living (ADL) items – toileting, bathing, feeding, transferring, walking/locomotion and dressing – measured similarly across the settings. This resulted in a 0–36-point scale for functional admission status, with 0 indicating maximal assistance to perform all ADLs and 36 indicating almost complete functional independence.

As shown in **Figure 1**, 1st PAC admission functional status scores do overlap between IRF, SNF and HHA. We chose a cutoff admission score of 12 (SNF median and close to IRF 75th percentile least impaired) as a minimum level of independence to be considered in the model. This removes the SNF cases that are most similar to IRF cases (i.e. the most likely IRF-eligible cases).

Figure 1: Distribution of Admission Functional Status Scores Across 1st PAC Cases



Source: Dobson DaVanzo analysis of Assessment Data, CMS DUA 52219

CLAIMS DATA FOR 2020 PAYMENT SIMULATION

We applied available early action 2020 claims to estimate pricing for SNF, HECH and Home Health care under the proposal. This data under CMS DUA 54757 (as used in the ongoing PQHH PDGM project) allowed us to make estimates of both 2020 SNF prospective payment system (PPS) payments and length of stay, as well home health PDGM case payments. We found that the average 2020 home health episode payment under PDGM for 'Early Admission' cases was about $2,040 for a 30-day episode.

SNF had an early 2020 average payment per day of about $546. Once we adjusted for the relative case-mix grouping of the SNF-HHA overlap cases, this rose to about $580. SNF per diem payments change throughout the length of stay. For example, after day 20, the beneficiary copay accounts for 20% of payments. For an average per diem payment of $580, this means that Medicare Trust Fund outlays decline to about $464 per day on day 21 and after.

HECH PAYMENT STRUCTURE:

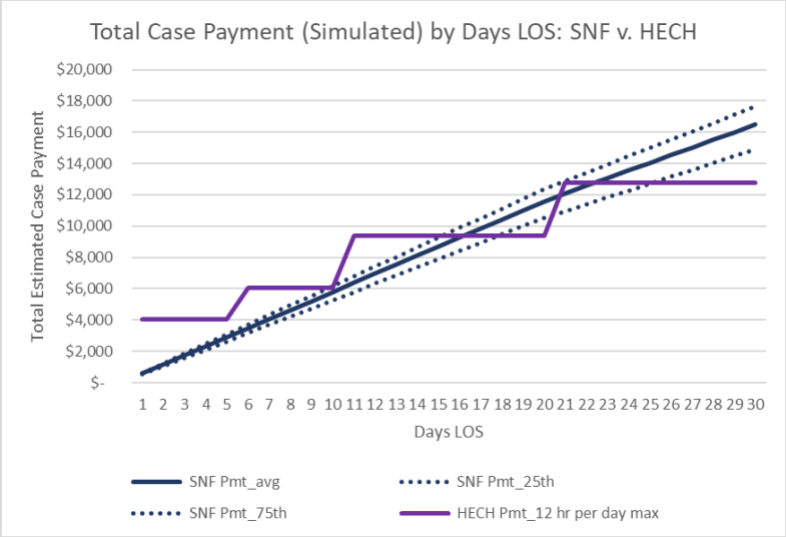
The HECH would serve as an add-on to a normally paid home health episode under the HH PPS. HECH payments are structured as a flat rate that can fall into one of four groups based on hours of additional services provided in the episode, which is then wage-index adjusted based on service location:

1. 0-60 Hours - $2,010.
2. 61-120 Hours - $4,020.

3. 121-240 Hours - $7,360.
4. 241-360 Hours - $10,720.

The average 2020 home health episode payment under PDGM for 'Early Admission' case-mix group cases was $2,040, which is a representative flat rate for the 30-day case in addition to the HECH add-on payment. For comparison, the average per diem Medicare SNF payment in early 2020 for included cases was estimated at about $580 (or about $16,500 for 30 days after accounting for beneficiary copays after day 20). **Figure 2** shows (a) total SNF expenditures per day length of stay (average, 25th and 75th percentiles) and (b) estimated HECH payments if the beneficiary requires 12 hours of extended home service for each day that they would have been in a SNF.

Figure 2: Simulated Case Payment of SNF and HECH (assuming 12 hours of HECH care is equivalent to one day of SNF stay)

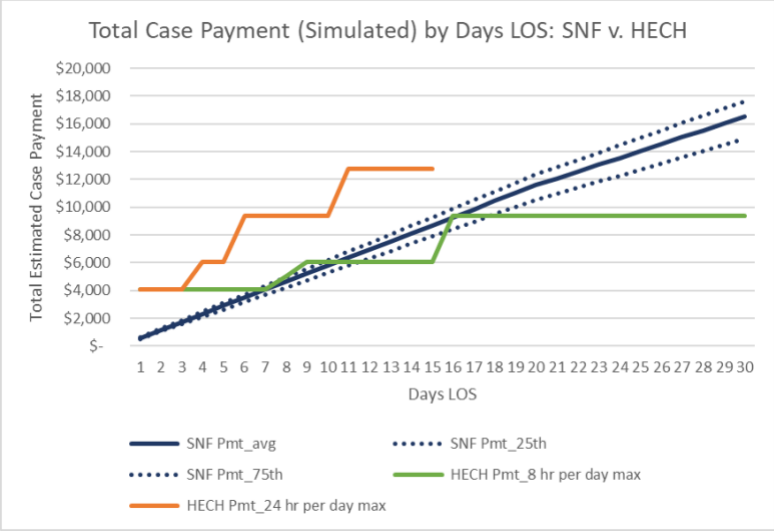


Source: Dobson | DaVanzo simulation with data from CMS DUA 52219 and DUA 54757

Here, the HECH has regions of expenditure reductions and increases depending on the SNF length of stay. This model becomes more highly advantageous (more likely to accrue savings relative to SNF) as less care is used (i.e. for lower-need cases). 12 hours of HECH care per day would maximize the benefit in that the beneficiary would exhaust the benefit on the last day of service (and achieve maximum payment by day 20).

Higher and lower care ranges are demonstrated in **Figure 3**. Here, an average of 8 hours of HECH service per day (or less) would accrue savings in most regions and achieve the second highest payment level by day 30 (8 hours times 30 days is 240 HECH hours, the maximum of group 2). Alternatively, maximally utilizing the benefit – 24-hour care – would exhaust the benefit by day 15 and not accrue savings at any point.

Figure 3: Simulated Case Payment of SNF and HECH (demonstrating 8 and 24 hours of HECH care as equivalent to one day of SNF stay)

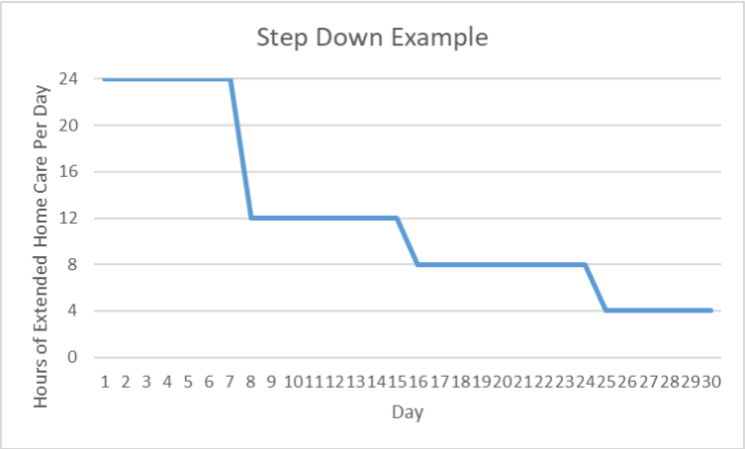


Source: Dobson | DaVanzo simulation with data from CMS DUA 52219 and DUA 54757

The HECH benefit as designed is for beneficiaries who require no more than 360 hours of medical supervision, support or care over the course of their 30-day stay (or 12 hours per day on average). Consistent daily use over 12 hours per day would cause the benefit to become exhausted before the 30-day episode is complete, which may then require either extended private duty home support or for the beneficiary to be transferred to an institutional setting.

Simulating step-down care, patients who start with 24-hour supervision and remain covered throughout the entire 30-day period so long as their average daily utilization is 12 hours or less per day for the full period. For example, in **Figure 4** we show a week each at 24 hours per day, 12 hours, 8 hours and 4 hours (360 hours total or 12 hours per day, the maximum benefit):

Figure 4: Simulated Step-Down Pattern Example



Source: Dobson | DaVanzo simulation

Claims Data for HECH Case Simulation

We applied 2016 Medicare administrative claims and functional assessments from the CACEP2 study analytic database (CMS DUA 52219) to estimate which SNF cases may be substitutable for HECH. To do so, we examined characteristics prior to and during SNF 1st PAC cases.[1] We tested multiple variations on these requirements to arrive at our final overlap test groups.

SNF case limitations:

1. Acute care hospital discharge characteristics:
    a. Minimum 3-day hospital stay to include typical SNF cases.
    b. Maximum 2 days in the ICU to exclude LTCH-eligible cases.
2. SNF stay characteristics:
    a. Maximum 30-day length of stay to match maximum episode length of HECH benefit.
    b. Composite functional impairment admission score $\geq$ 12 (more functionally independent than about 75% of IRF cases on admission) to remove IRF-eligible cases.
3. Home-life information:
    a. The SNF MDS 3.0 assessment tool includes two items that may be used to approximate whether the beneficiary may have caregiver support – often a

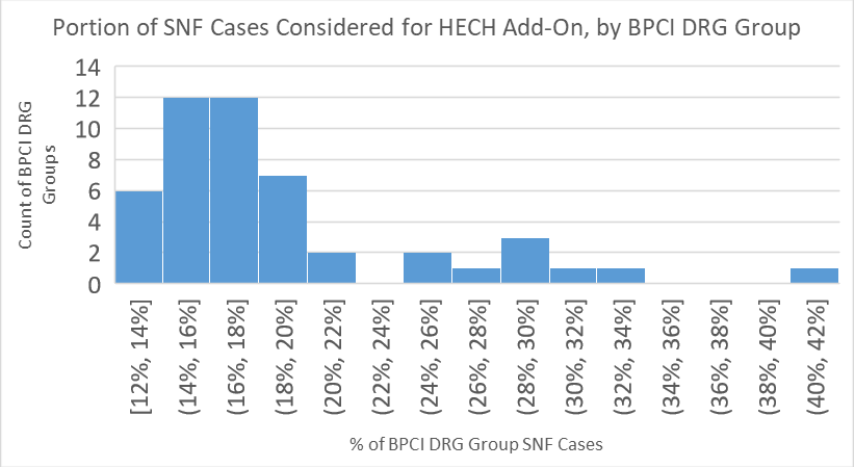
[1] SNF admission must occur within 14 days of acute hospital discharge and no other significant utilization occurred in between. See: CACEP2 Phase 1 report for additional detail.

critical element for many beneficiaries to remain in-home without 24-hour professional medical supervision.

i. Marital status and Family Involvement in Medical Decision-Making were the two closest proxies available. If either had a positive indicator, we considered the beneficiary to have a caregiver at home.

Combined, these criteria identified about 17.9% of SNF 1st PAC cases that may be appropriate the HECH add-on benefit. This varied by clinical group (we applied Bundled Payment for Clinical Improvement (BPCI) groupings from the acute care hospital) in **Figure 5**, with some groups indicating greater substitutability than others. For example, SNF Double Joint Replacement of the Lower Extremity shows 41% of cases could be substituted for by HECH, whereas more intensive or highly acute conditions like Cardiac Defibrillator, Stroke, Sepsis and Other Respiratory diseases show a 12% overlap.

Figure 5: Portion of SNF Cases Considered for HECH Add-On Substitution, by BPCI DRG Group

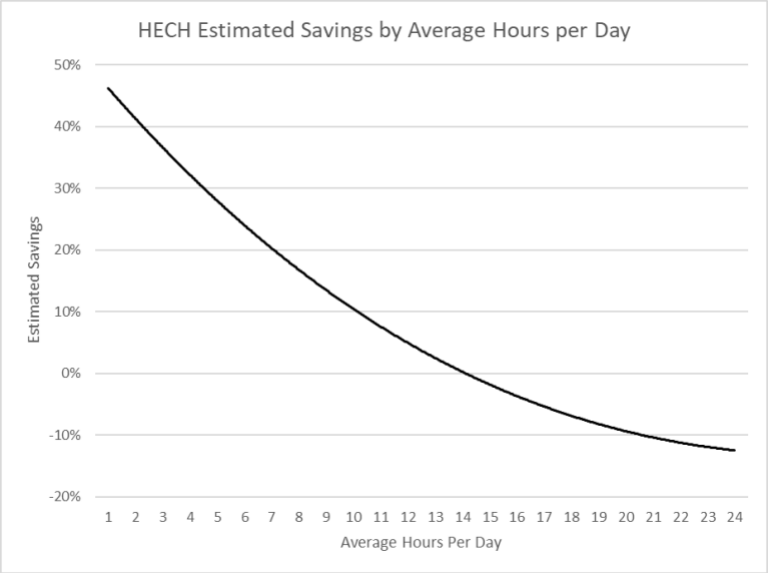


Source: Dobson | DaVanzo analysis of data from CMS DUA 52219

SIMULATION OF HOURS

After establishing case payments under the HECH and PDGM payment systems (for a HECH add-on case payment) and a PDPM payment for the SNF stay (based on observed length of stay), we were able to estimate savings rates by the assumed average number of hours per day of service. We took three approaches to simulating the relationship of SNF length of stay to hours of HECH add-on service (8 hours per day, 12 hours per day and 24 hours per day) and established estimated savings for each BPCI group given the distribution of days length of stay among included cases. From these point estimates, we fit a polynomial curve to interpolate and extrapolate the savings along a continuous range, **Figure 6**.

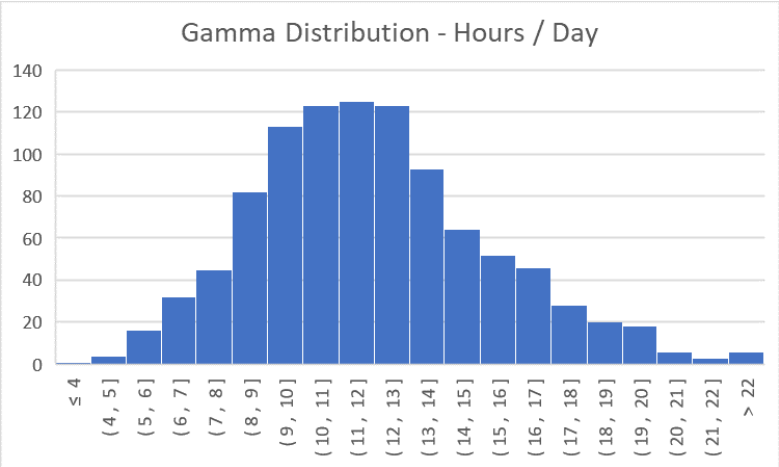
Figure 6: Estimated Case Savings by Average Hours Per Day of HECH Add-On



Source: Dobson | DaVanzo simulation with data from CMS DUA 52219

To project the spread of hours per day across cases, we applied over 1,000 randomized simulations of gamma distributions, while varying the center point of the distribution. We chose a gamma distribution because this tends to fit service utilization patterns (i.e. low median use relative to the mean).

Figure 7: Example of Gamma Distribution of Simulated HECH Hours Per Day, Centered at 12 hours Per Day



Source: Dobson | DaVanzo example gamma distribution

We varied the center point of the gamma distribution from 4 hours per day to 18 to establish savings estimates for a broad range of assumptions. Ultimately, we used peaks of 10-12 hours of care per day to estimate savings. Based on these analyses, we identified 12 hours as the realistic maximum benefit and this approach allows for potential outliers who would exhaust the benefit early.

Findings

To estimate the potential impact and reach of the HECH add-on benefit as proposed, we applied the CACEP2 database and draft *Choose Home Care Act of 2020* rule text to identify SNF cases that could potentially be appropriate HECH cases. We then adjusted the payment levels found in the CACEP2 database (2016) with 2020 payment levels and to address payment system updates (e.g. PDGM, PDPM).

We evaluated the net impact of a potential HECH implementation approach with several criteria in mind: 1) what is the expected change in Medicare outlays and 2) how would this affect home health case load relative to current volume.

Overall, the most critical analytic assumption is how each day of SNF institutional care would translate to hours of care in HECH. After establishing payment rates and defining overlapping cases, we ran deterministic simulations of three distinct translation patterns (i.e., how SNF length of stay relates to HECH payment group – 8, 12 and 24 hours of HECH care to a SNF day) to establish an equation relating expected savings by hours of service per day (see Figure 6) accounting for the actual distribution of SNF case lengths of stay. We then ran thousands of simulations allowing for random variation in hours per day (in a gamma distribution, as in Figure 7) to estimate ranges of savings. Thus, savings are estimated from a combination of real-world variation in SNF length of stay and random variation in the relationship between the SNF length of stay and number of hours applied under the HECH model.

Last, we applied the 2020 Congressional Budget Office SNF Medicare baseline to estimate long-term savings. These estimates were made prior to broad understanding of the effects of COVID-19 on the healthcare system. While we did examine early action 2020 claims (and found SNFs with 19% reduced volume but 1.5% increased payments in the first 6 months of 2020 relative to 2019), we ultimately did not alter the 10-year CBO outlook from which we draw savings estimates.

Key findings:

1. SNF cases for HECH add-on consideration: 17.9% of included 1st PAC CACEP2 SNF cases (198k), 13.2% of simulated 2020 SNF payments ($2.2B).
2. Substitutions would increase home health 1st PAC case volume by about 20.7%. Total spending under the HECH add-on range depends on assumptions; applying a

gamma distribution within a monte carlo framework and varying assumptions, we estimate this could generate savings from $144-247M (6.5-11.1% savings on matched cases) per year.

3. These annual savings would accrue to $1.6-2.8B over ten years. This represents a 0.5-0.9% overall reduction in relative to SNF expenditures over the period.

Discussion

The HECH add-on would meaningfully expand the Medicare home health benefit and allow expanded choice of care setting for qualifying beneficiaries, specifically allowing more beneficiaries to remain in their place of residence following a hospital discharge. This is particularly important during the ongoing COVID-19 public health emergencies, wherein poor infection control in SNFs and nursing homes has been a contributing factor in patient mortality. In simulations, the HECH add-on could also provide significant Medicare savings when substituting for SNF institutional care.

There are a few points of caution. One is that the HECH add-on payment structure where payments are based on achievement of utilization thresholds engenders a key criticism of the historic HH PPS HHRG system. The HECH add-on payment levels could invite threshold effects that could partially reduce savings and yield program integrity inquiries.

Second, we made multiple analytic assumptions to identify appropriate patients and simulate the care they might need under the HECH add-on if they substitute this for SNF institutional care. We assume that patients and their providers, discharge planners, and caregivers will work together to make clinically appropriate judgements and will understand the limitations (and care implications there-of) of the new benefit when they make such decisions. We simulated this in a relatively nuanced way by limiting SNF substitution cases to those with length of stay of 30 days or shorter, setting a maximum level of assessed functional dependence, and requiring some manner of family or caregiver involvement.

Last, we did not estimate the pent-up demand for this service among current 1st PAC home health users (e.g. what portion of current utilizers pay for a HECH-like service out of pocket or utilize informal caregivers for that role). Estimated savings are predicated on the substitution for SNF institutional stays. HECH add-ons to current home health cases would not generate Medicare savings unless they accrued through lower service use (e.g. reduced readmissions or other setting use), though it would still provide much-expanded home services to beneficiaries, potentially offsetting privately paid nursing and/or unpaid informal caregiving.