MILLIMAN REPORT

Evaluation of the Savings Methodology for the HCSC Health Advocacy Solutions Program

Commissioned by Health Care Service Corporation

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I. EXECUTIVE SUMMARY

Health Care Service Corporation (HCSC) commissioned Milliman, Inc. (Milliman) to review the savings methodology[1] HCSC uses to estimate the financial impact of its Health Advocacy Solutions (HAS) program. This report describes the results of Milliman's independent review of the HAS program savings calculation methodology as of November 1, 2022, based on analysis of claims data and computer code, internal documentation, and oral interviews with HCSC's HAS program leads.

HIGHLIGHTS

According to HCSC, its clients (e.g., employers) purchase the HAS program to add clinical value to their Administrative Services Only (ASO) contracts, enhance member experience, and develop medical cost savings. HCSC describes the HAS program as a high-intensity program viewing members holistically, replacing traditional case management and disease management programs.

HCSC considers the clinical and non-clinical financial impact attributable to the HAS program to be the difference between actual allowed costs and what allowed costs would have been in the absence of any utilization management (UM), case management, disease management, member redirection, or other interventions included in the HAS program. For most clients, what matters is not the total savings reported, but rather the difference in savings (net of program fees) between the HAS program and programs in place prior to electing the HAS program. Measuring the incremental financial impact of prospective clients moving from another carrier to HCSC using the HAS methodology may be difficult.

HCSC estimates this financial impact using a custom savings methodology based on 15 predefined "savings levers." The total savings attributed to the HAS program is the sum of the savings separately calculated for each lever. By design, most of these levers report only direct or "hard" savings from documented interventions with specific members on specific dates. They do not measure indirect or "soft" savings due to secondary effects of the HAS program, such as future medical costs avoided due to early intervention or the sentinel effect of providers proactively choosing treatments meeting the (UM) guidelines of the HAS program.

STRENGTHS OF THE SAVINGS METHODOLOGY

From our detailed review of the savings levers as of November 1, 2022, we find the structure of the HAS program savings methodology to be fundamentally sound, recognizing that clients moving from existing savings programs to HAS will likely see incremental savings lower than the stated HAS savings. We note several strengths of this methodology as assessed within the scope of our review:

- The calculation of savings from the individual levers is appropriately designed to measure the intended savings and is accurately implemented, except as noted below.
- For the levers typically yielding the largest savings in the HAS program, the savings calculated by this methodology compare well with savings determined from external sources and alternative assumptions.
- The savings levers are largely independent and nonoverlapping, and thus less likely to overcount impacts. In the limited cases where two savings levers might evaluate the same claim events, the interaction produces no material overstatement of savings.
- The savings methodology acknowledges the variability of claims experience for smaller clients due to inherently lower credibility.

IMPORTANT LIMITATIONS OF THE SAVINGS METHODOLOGY

The HAS program savings methodology exhibits factors that may understate or overstate the actual savings of the HAS program. The most important of these include:

- The calculation of outpatient UM savings does not reflect the additional cost of replacement procedures, likely overstating direct savings. HCSC intends to begin subtracting replacement costs from reported outpatient UM savings as part of a future enhancement.

[1] *For simplicity and clarity, this report uses the phrase "savings methodology" in reference to the methodology HCSC calls its "Savings Methodology" or "Cost Savings Analysis." The word "savings" may refer to positive savings (i.e., reduced cost) or negative savings (i.e., increased cost).*

- The methodology for non-case rate inpatient UM assumes that without intervention, members would have stayed for the originally requested period, possibly overstating savings.
- The methodology reduces recorded savings by all services occurring on the non-case rate inpatient days saved. If the originally requested, longer inpatient stay had been approved, some of these services might still have been delivered independently of the inpatient stay. In this situation, the methodology may understate savings.
- As mentioned above, the HAS savings methodology reports total savings, not the change in savings for clients engaged in UM programs prior to enrolling in the HAS program.
- Savings are reported on an allowed cost basis and are not net of HAS program fees. Clients interpreting the HAS program savings reports should also consider the financial impact to net paid cost (after cost sharing and other offsets) and the impact of HAS program fees.
- The intentional choice to report only direct savings likely understates the total savings achieved, relative to the difference between actual costs and what costs would have been if no components of the HAS program had been in place.

CONSIDERATIONS

This review was based on sample calculations and qualitative descriptions of the HAS program savings methodology for all 15 savings levers. We also reviewed claims data and the computer code calculating savings from the key savings levers constituting more than 60% of aggregate reported savings: medical inpatient UM, outpatient UM (expanded), member redirection, and readmission reduction. The potential exists for overstatement or understatement of savings in the implementation of the unreviewed savings levers. See Section IV and V of this report for a more thorough description of specific limitations and areas beyond the scope of this report. The estimated savings reported may vary from “actual” savings (i.e., savings calculated using actual retrospective experience) and savings estimated using alternative savings methodologies. Evaluating alternative methodologies was out of scope from our detailed review of the existing programs.

We prepared this report for HCSC and grant permission to HCSC to release this report to third parties in its entirety. However, Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this report. Those reviewing the HAS program savings should take full responsibility for interpreting the results, which should be reviewed by someone knowledgeable in the areas of healthcare data and financial impact calculations. Milliman recommends any recipient of this report be aided by its own actuary or other qualified professional when reviewing the report. Use of this report is voluntary and should not be relied upon to make any specific business decisions. Materials may not be reproduced without the express written consent of Milliman.

This analysis is an independent review of the HAS program savings methodology. Milliman did not review, and does not provide an opinion on, the effectiveness of the HCSC HAS program itself. Neither Milliman, nor the authors, endorse any products or programs in general, including the HAS program and HCSC’s HAS savings methodology.

II. BACKGROUND

HCSC first introduced the HAS program in 2018 with seven ASO accounts. In 2021 the program had grown to serve approximately 1.6 million members across 84 accounts. HCSC describes HAS as a high-intensity program, combining concierge and clinical support to help HCSC members navigate the healthcare system and to provide savings for participating employer plan sponsors.

According to HCSC, key components of the HAS program include:

- Inpatient and outpatient UM
- Holistic health management
- Clinical specialty care management (e.g., oncology, diabetes, end-of-life care)
- Behavioral health (BH) resources, including inpatient and outpatient UM, case management, and specialty management (e.g., risk identification, autism response, eating disorder care team)
- Pharmaceutical care management, including real-time resources and interventions to improve medication adherence and reduce pharmacy costs
- Customer service providing a "one-stop shop" experience for members

The HAS program resembles other clinical programs offered in the marketplace, which typically include components such as UM, care management, specialty care, and a 24/7 nurse line that aim to improve care and reduce cost. Increasingly, pharmacy and BH management are integrated as core components of such programs. Clinical programs can vary widely in terms of scope, design, resources, care coordination, and clinical intensity. HCSC describes HAS as a high-intensity clinical program.

Based on Milliman's review, the program appears to be highly configurable, providing a high degree of account-level customization for both the clinical and non-clinical savings levers. Some features[2] (e.g., a dedicated pod staffing model) are buy-up options. Clients also have the option to remove some standard features (e.g., specialty drug preauthorization and digital health resources for condition management). While the core components are typical of clinical programs, the frequency and intensity of clinical activities and the integrated, holistic approach are features distinguishing HAS from typical programs.

Given the program complexity (i.e., breadth, scope, and number of interventions), HCSC measures the HAS program performance against its performance guarantees with clients using a custom savings methodology. HCSC defines 15 "savings levers" categorized into four groups, with each lever corresponding to a core or optional feature of HAS. The program reports the total savings of those levers in which each client elects.

Table 1
Health Care Service Corporation
HAS Savings Levers

Utilization Management (UM)	Holistic Care Management	Pharmaceutical Care Management	Non-Clinical
Medical Inpatient UM	Medical Program Documented Savings	Medical Pharmacy – Specialty Drugs	Member Redirection – Benefits Value Advisor
Outpatient UM (Standard)	Readmission Reduction	Medical Pharmacy – Site of Care	Pre-Payment Review
Outpatient UM (Expanded)	24/7 Nurse Line		BH Claims Analytics and Processing
BH Inpatient UM	BH Case Management		
BH Outpatient UM	BH Care Coordination and Early Intervention		

[2] *Savings levers are measurable and contribute to savings reported by the HAS program. Features are characteristics of the HAS program not considered in the savings methodology.*

III. ASSESSMENT OF THE HAS PROGRAM SAVINGS METHODOLOGY

Our review identified strengths of the HCSC HAS program and its savings methodology and several ways the program and savings methodology could be improved or enhanced. We also identified important considerations HCSC and its clients should bear in mind when interpreting the results.

STRENGTHS OF THE SAVINGS METHODOLOGY

We note several strengths of the HAS savings methodology.

- ***Appropriate calculations and accurate implementation***. The savings calculation for each of the 15 savings levers is reasonable and actuarially appropriate. We examined HCSC's Structured Query Language (SQL) code in depth for four savings levers (inpatient UM, expanded outpatient UM, readmission reduction, and member redirection) which account for over 60% of total savings. The code accurately implements the described methodology for these four levers. Credibility concerns and edge cases in the underlying claims data were handled appropriately.

- ***HAS calculated savings compare well with external sources***. The most impactful levers used in the HAS program produce results that compare well with savings calculated relative to external benchmarks. This comparison provides support for the reasonability of HAS savings results.

- ***Consideration of savings overlap.*** The existence of 15 separate savings levers could lead to savings counted more than once by separate levers. A systematic analysis of all possible interactions among the levers confirmed most levers to be independent of one another. Moreover, in the small number of cases where overlap is possible, any potential overcounting of savings is immaterial to the overall aggregate savings. These findings suggest the methodology does not over-count the impact of related levers.

- ***Suitable for varied client sizes***. The HAS program savings methodology acknowledges that for smaller clients (i.e., smaller groups), claims data may not provide an actuarially credible measure of the financial impact. For these smaller clients, performance guarantees may be measured from book-of-business results.

LIMITATIONS OF THE SAVINGS METHODOLOGY

The review of the HAS program savings methodology also identified several potential opportunities to more accurately measure the intended savings. If implemented, some of the following observations may have a material impact on estimated HAS savings. We did not estimate the amount of overstated and understated savings of the limitations.

- ***UM savings do not include replacement costs leading to overstated savings.*** As of November 1, 2022, the savings calculated for the expanded outpatient UM savings lever does not reflect the additional cost from interventions this savings lever may introduce, whether as replacement costs for a denied treatment or as a first-line response before the requested treatment may be eventually approved. For example, UM may require an x-ray instead of a magnetic resonance imaging (MRI), but after viewing the x-ray, the radiologist requires more information and an MRI takes place anyway. In such a case, the effect of outpatient UM is to increase medical spend by requiring the x-ray before the MRI. The HAS program savings methodology does not capture this cost, which can lead to overstating savings. HCSC intends to modify its calculation in the future to reduce reported savings by the cost of replacement treatment.

- ***Inpatient early discharges without UM.*** The savings methodology for inpatient UM calculates days saved by subtracting days approved from days originally requested, excluding stays paid on a case rate basis. This approach implicitly assumes that without the UM intervention, all members would have stayed the full period requested. As some members would likely have discharged earlier than the period requested, this assumption likely overstates savings.

- ***Post-discharge subtractions.*** When inpatient UM leads to a member's discharge earlier than originally requested, the HAS program savings methodology assumes all medical cost on the days avoided is follow-up care that would have occurred during the longer inpatient stay originally requested. Under this assumption, the inpatient UM did not save the entire cost of the avoided inpatient days, because these medical costs were only moved to a non-inpatient setting. These costs are therefore subtracted from the UM savings. This may lead to understating savings when unrelated procedures occur on the avoided days or if related procedures occurring on the avoided days would have occurred post discharge anyway.

- ***Savings are measured against a hypothetical baseline of no intervention.*** Prospective purchasers of the HAS program can make a fair comparison among HCSC's other UM and case management programs because their financial impact is also measured against the same theoretical zero-intervention baseline as the HAS program. Current clients of HCSC can thus compare the incremental cost of upgrading to the HAS program from another HCSC program against the expected incremental savings. Prospective customers of HCSC should likewise compare prospective HAS program savings against the savings they currently receive due to UM, case management, and other similar services from their current carrier. This comparison to other carriers' programs may be difficult.

- ***Savings are gross, not net.*** The HAS program savings methodology appropriately ignores billed costs and intentionally estimates the savings on an allowed cost basis. The net financial impact to HCSC's clients therefore will differ from the calculated impact due to factors such as member cost sharing, reinsurance, pharmaceutical rebates, taxpayer subsidies, provider risk-sharing arrangements, and HAS program fees.

- ***Only direct savings reported.*** By design, most savings levers measure only savings attributed to documented interventions with specific members on specific dates. This approach likely understates actual savings, defined as the difference between actual costs and what costs would have been without the HAS program, due to indirect effects of the program. For example, HAS outreach may lead to early intervention, immunization, and better medication adherence, resulting in better population health and lower future medical costs, but such reductions in medical costs are not included in the reported savings.

  As another example, providers accustomed to the UM provided by the HAS program may learn to request treatments likely to be approved rather than treatments UM would deny. The sentinel effect savings in this example is due to the presence of the HAS program, but because no explicit UM denials occurred, no savings is recorded.

  Some actual results may lead to indirect costs, reducing savings. For example, the clinical team's care navigation and support for a member newly diagnosed with a condition may increase medical spend as the member is connected with appropriate treatment and services. Similarly, if patients are discharged prematurely due to UM, they may have higher subsequent medical costs.

IV. DATA AND METHODOLOGICAL CONSIDERATIONS

This section describes the data we relied on when evaluating the HAS program savings methodology along with the approach and various assumptions we used in our evaluation.

DATA

We relied on the following information:

- Client-facing description of the HAS program savings methodology[3]
- Internal documentation of further methodology details[4]
- Program descriptions through written materials[5]
- Presentations of savings results to clients of HCSC[6]
- Marketing materials[7]
- Descriptions of performance guarantees[8]
- Interviews of several HCSC employees responsible for key components of the HAS program from September to December 2021
- Claims and authorization data in HCSC's production environment, including data dictionaries and other information to support our understanding of the claims level information, accessed October 2022
- Other HAS program related information in HCSC's production environment, such as savings methodology dashboards, accessed October 2022
- Production environment SQL code, including stored procedures used to execute the savings lever logic, accessed October 2022
- Discussions with HCSC personnel to facilitate our technical understanding of the savings levers, July to October 2022

METHODOLOGY

Our review included the following:

- We identified, requested, reviewed, and evaluated HAS program documentation, marketing materials, savings presentations to clients, and other written materials relating to the HAS program.
- We developed question sets and conducted detailed interviews with leaders of key branches of the HAS program (e.g., actuarial, clinical, product, data science).
- We reviewed the written materials provided from HCSC and information collected through the detailed interviews. We conducted an iterative question-and-answer process to gain a deeper understanding of the HAS program and its savings methodology.
- We evaluated the clinical appropriateness of each component of the HAS program.
- For each savings lever, we considered scenarios potentially leading to over- or under-estimation of savings.
- We looked for areas where selection bias, data quality, or flooring of savings at zero might impact the calculated savings.

[3] "Client Version Savings Methodology 042021.pdf"
[4] E.g., "AuthBased RORA (Feb 2018).pptx" and "BHCCEI_Evaluation (002).pptx"
[5] E.g., "Health Advocacy Solutions 2022 Presentation.pdf" and "HAS_Package_Summary.pptx" (dated 2022)
[6] E.g., "WAGs 2017 Year End Analysis.pdf," "Walgreens 2018 Annual.pptx"
[7] E.g., "healthmanagement&advocacy_packageoptions – September 2021 v5 Update ML Final.pptx" and "HAS_2022Renewing_Client_Configuration_Discussion_Checklist.pptx"
[8] E.g., "pg_guide_has_ppb_1000_4999.pptx" and "pg_guide_has_traditional_1000_4999.pptx", dated 1/25/2021

- We assessed materiality based on measured financial impacts and its relation to the scope of the HAS program savings methodology.

- We systematically examined all pairs of savings levers for the possibility of overlapping savings. When two savings levers might record savings for the same member claims event, we estimated the frequency of such an occurrence, whether the interaction carried a bias towards overestimation or underestimation of savings, and the potential magnitude of such a bias.

- After reviewing the qualitative methodology for all savings levers, we selected the following savings levers to evaluate in further detail. These represent over 60% of the total savings across the entire HAS program in the 2020 book of business and reflect a diversity in the savings lever methodology:

  - Medical inpatient UM
  - Expanded outpatient UM
  - Member redirection – Benefits Value Advisor
  - Readmission reduction

- For the selected levers, we examined the relevant SQL code used by HCSC to determine savings. We compared the coding logic against program documentation. We met with HCSC to understand the coding logic and its implementation. We implemented savings levers and investigated data in SAS software. We used HCSC claims data to perform reasonability checks and to evaluate HAS savings calculations against alternate methodologies and external sources.

We limited our most detailed analysis to a set of key, well-diversified savings levers to ensure we captured those levers contributing most of the total savings and to capture a breadth of savings levers with differing methodologies. The breadth of the HAS program limited our ability to complete an exhaustive, detailed review of every savings lever. Therefore, the potential exists for issues to be identified in those savings levers we did not review in detail. However, we reviewed all savings levers qualitatively, and the impact of any potential issue would likely be less than the estimated savings for that savings lever and result in a correspondingly small impact on the total program savings. The value of performance guarantees and the relationship of HAS program fees to achieved savings lay outside the scope of our review, and we did not evaluate them.

V. CAVEATS, LIMITATIONS, AND QUALIFICATIONS

The information in this report is intended for the use of HCSC to provide our evaluation of the HAS program savings methodology for estimating the savings of the HAS program. It may not be appropriate, and should not be used, for other purposes.

This report is subject to the terms and conditions of the consulting services agreement between HCSC and Milliman dated October 7, 2009, as amended. We understand HCSC intends to provide public access to this report through an internet link to their existing and prospective clients. If shared externally, the report must be shared in its entirety unless otherwise approved by Milliman. We do not intend this information to benefit, or create a legal liability to, any third party, even if we permit the distribution of our work product to such third party.

In completing this evaluation, we relied on information provided by HCSC, including the information listed in section IV. While we reviewed this information for reasonableness, we accepted it without audit. If any of this information is inaccurate or incomplete, the contents of this report along with many of our conclusions may likewise be inaccurate or incomplete. HCSC may change its methodology at any time. If HCSC changes methodology from the materials we reviewed through October 2022, the contents of this report may no longer be applicable. HCSC clients' actual results will differ from modeled projections due to factors such as differing populations and their health status, changes in treatment and programs, fluctuations in provider reimbursement and delivery systems, regulations, and random variation. HCSC and their current and prospective clients should monitor their experience as it emerges.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. Troy Filipek, Todd Wanta, and Anders Hendrickson are members of the American Academy of Actuaries and meet the qualification standards of the Academy to perform the review contained in this report. To the best of our knowledge and belief, this report is accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

Models used in the preparation of our analysis were applied consistently with their intended use. Where we relied on models developed by others, we have made a reasonable effort to understand the intended purpose, general operation, dependencies and sensitivities of those models.

This report contains the review and opinions of the authors and not necessarily that of Milliman. Milliman did not review, and does not provide an opinion on, the effectiveness of the HCSC HAS program itself. Neither Milliman nor the authors endorse any products or programs in general, including the HAS program and savings methodology.

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