



The Helper Bees

Changing Healthcare
Workers During
Recovery Creates
Inconsistencies and
Changes to Timesheets

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Overview

Changing Healthcare Workers During Recovery Creates Inconsistencies and Changes to Timesheets

This white paper is the first quantified analysis of how a patient's ADL scores can change when switching caregivers. Through Helper Bees data and case studies, this paper substantiates that a change in caregiver (also known as helper) for a claimant (or the patient) during the course of their recovery can significantly skew data collected from a visit, as well as lower overall utilization for insurance carriers.

Through the data collected and case study analysis, a correlation can be made between a change in caregivers and a need to fix timesheets for hours worked and Assisted Daily Living (ADL) scores from visits. The variance in timesheet data discrepancy is seen for the period of time between the transition from one caregiver to the next.

ADLs are an industry-standard in care evaluation, if the data collected were reported incorrectly it could cause numerous problems for providing an accurate quantitative analysis of care needed based on the type of claim.

Additionally, if the data needs to be adjusted after the initial report, this can cause wasted staff-hours and lags in reporting. The Helper Bees collection of this data, analysis, and presentation of case studies is the first time that a correlation has been drawn between a change in caregiver and disruption in ADL score.

This data collection methodology is crucial in helping insurance, healthcare and long-term care companies begin to identify and solve discrepancies that can happen when needing to replace a caregiver.

It is also important to note, despite some limitations with caregiver changes, caregiver reported ADL data is still vital to insurance companies for understanding the evaluation of actual hours needed for claimants. Even the differential in data between caregiver changes gives us essential insight into how important industry standards and training become in the industry.

Changing Caregivers and Timesheet Adjustments

Outside of basic administration, like recording the number of hours a caregiver spends with a claimant, other essential data that is collected is the Assisted Daily Living (ADL) score. This score is imperative in helping healthcare and insurance agencies understand need versus hours for claims. Caregivers use a scoring system that assigns ADLs with a value from 0-3 depending on the severity of care provided.

A score of 0 (NP or None Provided) indicates that no help is needed or requested. A score of 1 (CUE, cueing) meant a client needed a reminder or nudge about a behavior, but they did not need assistance or require monitoring during the activity. A score of 2 (SBA or stand by assistance) signified that the helper needed to be in the same room and stand by to assist with the task as required. Finally, a score of three (HOA or hands-on assistance) denoted full hands-on assistance was needed from the helper to perform a task. There are five standard ADLs that are recorded and scored each day, the maximum score is fifteen and the minimum score is zero.

There are numerous reasons why a claimant may need to change caregivers during their recovery period. Common reasons are that a caregiver may move, need to change their hours, they found a new job, or the two may just not be the right fit for each other. No matter what the reason may be, a change in caregivers can ultimately compromise the data collected and can cause issues over long term care.

If scoring is inconsistent and incorrect, the data will not support if a claimant is getting better or worse. Inaccurate reporting of care, even if fixed, could eventually prove problematic when analyzing the ADL data and knowing if the data is reliable. Fixing incorrect data also causes loss of productivity for carriers. Instead of focusing on estimation and analysis, adjusters waste time and effort on going back and adjusting entries

Onboarding and training for new caregivers are two of the biggest areas that can lead to why data can differ between caregivers so significantly.

User Behavior

If ADLs are an industry standard, then why is there an inconsistency in the data collected? The way a helper assesses the level of need varies because of factors like education, training, personality and perception. This is why user behavior and error are the most common causes of data discrepancies.

Onboarding and training for new caregivers are two of the biggest areas that can lead to why data can differ between caregivers so significantly. The onboarding and training processes can vary greatly between in-home care agencies. While ADLs are standard, the perception of how to assess them is not as easily standardized. An individual's personality can affect how they rate an ADL score. What one caregiver could perceive as a nudge, another could think was more hands-on assistance or no assistance at all. For the most part, ADLs should not be so widely interpreted; standards are possible with the right education and training.

Other onboarding factors that can affect scoring is when a new helper starts an assignment, there can be an adjustment period in both how to record the time and how to assess the patient's level of need. The straightforward practice of how to enter time and scores into a new system can also cause errors in initial submissions. This simple learning curve can cause hours of readjustment and possible corruption of data for analysis.

No matter what reasons changes are occurring, the data shows that requests to change entries happen more often with claimants who change caregivers than those who remain with the same helper.

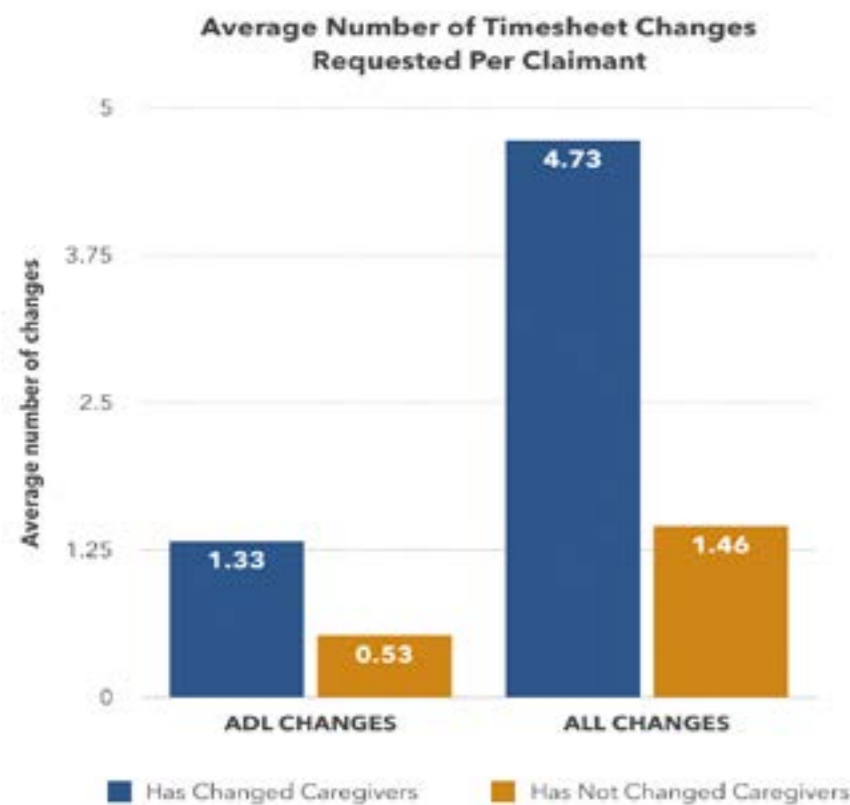
Data:

Changes to Data Collection

The Helper Bees (THB) collected data from 326 claimants and 696 helpers over the course of 558 days, spanning from May 10, 2018, to November 19, 2019. The data was limited to recorded timesheets between 2 and 24 hours. Helpers had to have been active for at least seven days and data was limited to claimants with at least 30 timesheets on record.

From the 326 claimants studied, 195 did not change caregivers during the timeframe, 131 did. Claimants fall into three different care groups, high, medium, and low. High care groups consist of patients that have the highest daily ADL max scores, between 11- 15. This is the highest level of hands-on care a patient can receive and often correlates to the highest hours of need. The medium group's score range between 6-10 and the low 1-5.

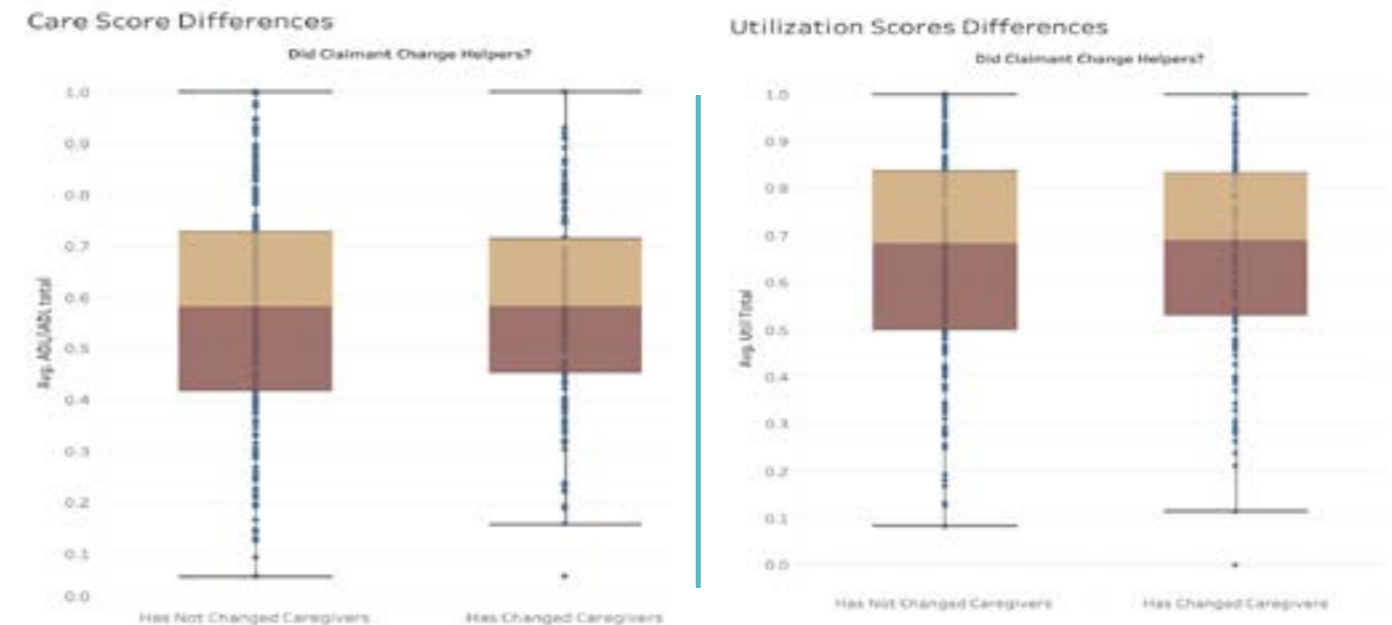
Data collected from Helper Bees caregivers, during daily visits of patients, demonstrates a correlation between the hours of care, and the number of hands-on assistance needed, and into which care level group a patient belongs. THB whitepaper, *The Greater Need for Hands-on Assistance Increases Care Hours Needed from In-Home Healthcare Management*, further explains the connection between ADL scores and the number of hours of needed in each group and how it relates to hands-on care.



From the group that did change caregivers, 41% were in the high hours or higher need intensity group and averaged 4.31 caregivers per claimant. The moderate care group averaged 3.22 helpers, or 34%, and the low group 2.72 or 24%. For those that did not change caregivers, the percentages per group were consistent throughout the high, medium and low groups. The data average for that group was 32.8% for high, 33% for moderate and 34.8% for low.

The most telling data corresponds to claimants who have changed caregivers are shown to have had the most changes requested to a submitted timesheet. Reasons for changing an already submitted timesheet range from needing to change hours worked to changing ADL scores. In all, claimants who have changed caregivers have an average of 4.73 changes requested, while those who have not changed caregivers is only 1.46.

From this data, there doesn't appear to be a relation between care and utilization scores and the likelihood to change caregivers. Both groups are nearly identical in composition for care and utilization intensity.



ANOVA results, as seen in the box and whisker plots, show that the composition of the groups are indeed different with a high level of certainty. Visual analysis of the two groups confirmed that composition is nearly identical, indicating a level of homogeneity. A one-way between groups analysis of variance (ANOVA) was run and found no statistically significant difference at the $p < 0.05$ between the two groups' utilization or care scores. Therefore, we can eliminate differences in care needs as a confounding factor.

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Case Studies

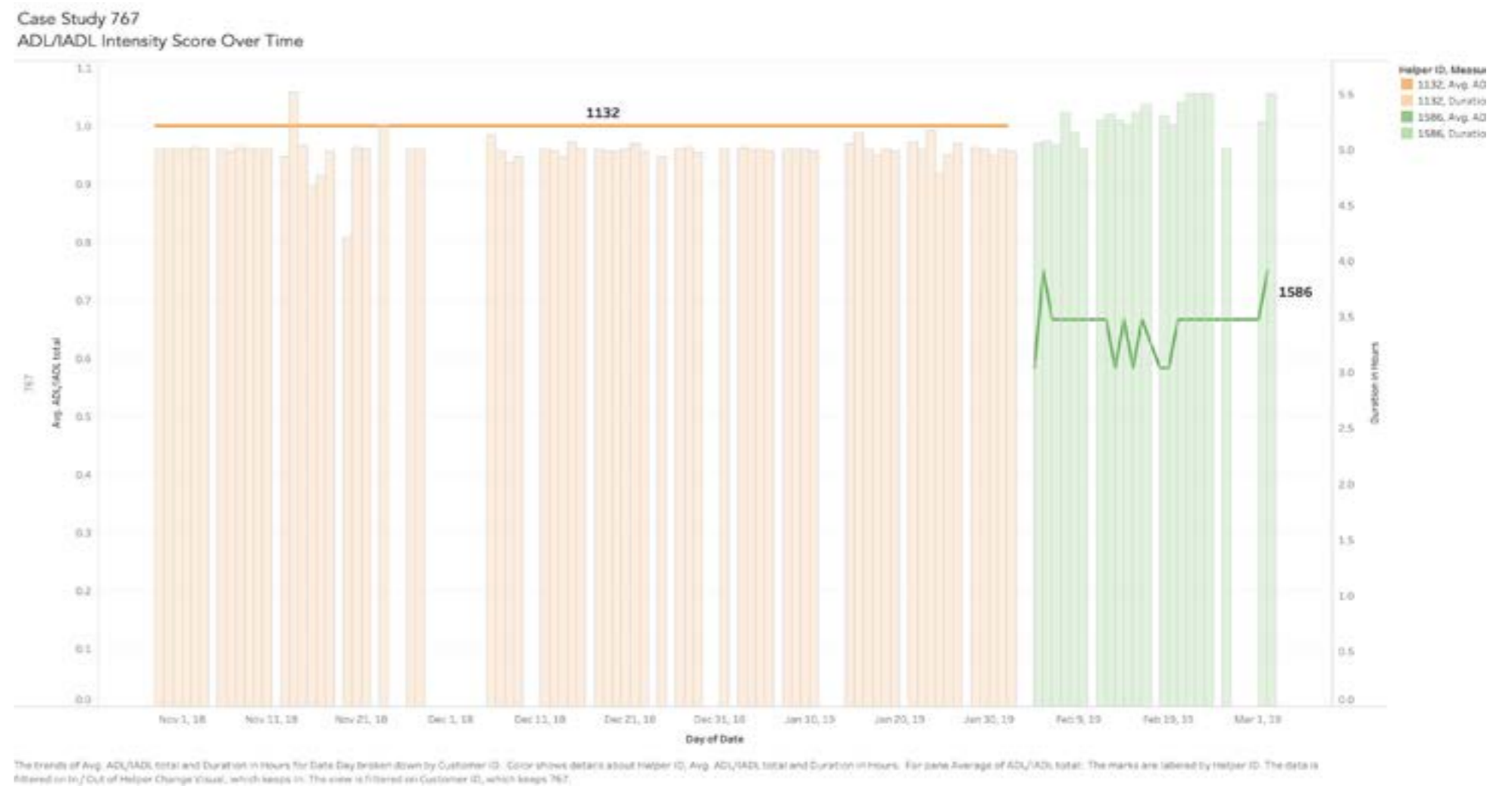
For this study, claimants were matched to a caregiver based on the total duration of hours, number of timesheets, number of visits per month on average, average number of helpers per week and a similar ADL/IADL intensity score.

Looking closely into four specific case studies, we can identify that changes in score reporting can be drastically different once a new caregiver takes over. The data shows that there is no trend of scores being lower or higher after switching caregivers; instead, it is a mix of both.

This begins to indicate that caregivers are neither prone to reporting care needs over what they should be or under what they should be but instead starts establishing that caregivers are interpreting care needs in different ways. This inconsistent reporting between caregivers can be for a multitude of reasons, and range anywhere from training to individual perception.

While there is no determination of why or how a caregiver assesses a claimant's needs differently, there is a distinct consistency in the scores changing immediately upon a new caregiver taking over. For this paper, four claimants were studied. These patients were 767, 875, 1000, and 1237. For the purposes of this study, we'll examine the change in data scoring between two caregivers for each claimant.

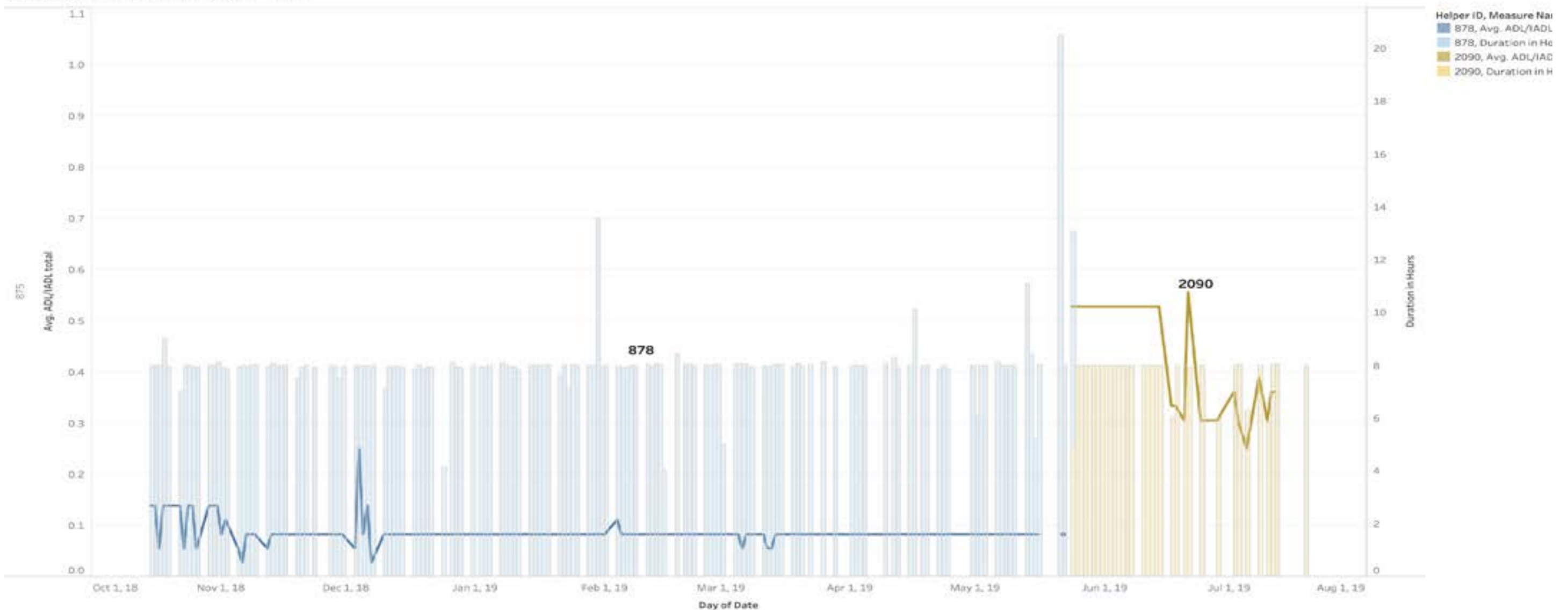
Claimant 767's scores decreased immediately and drastically upon caregiver 2 (#1586) starting. Caregiver 1 (#1132) consistently gave the patient the same score, which was the highest score possible or 100% on the graph, over three months. They were also consistently logging around 5-6 hours a day. When caregiver two took over, they began scoring the patient considerably lower, around 50-60 percent, but were logging the same number of hours as 1132.



Conversely, for claimant 875, caregiver 1 (#878) immediately scored their ADL needs much higher than caregiver 2 (#2090). 875 had, for the most part, remained consistently around 10% for approximately eight months, with a few intermittent, but short, spikes.

When caregiver 2 (#2090) took over care, the score started over double, around 50% for about a month, and then dropped a bit, but still hovering around 30-40 percent. In this case, the hours also remained consistent between the two caregivers, around 8 hours each.

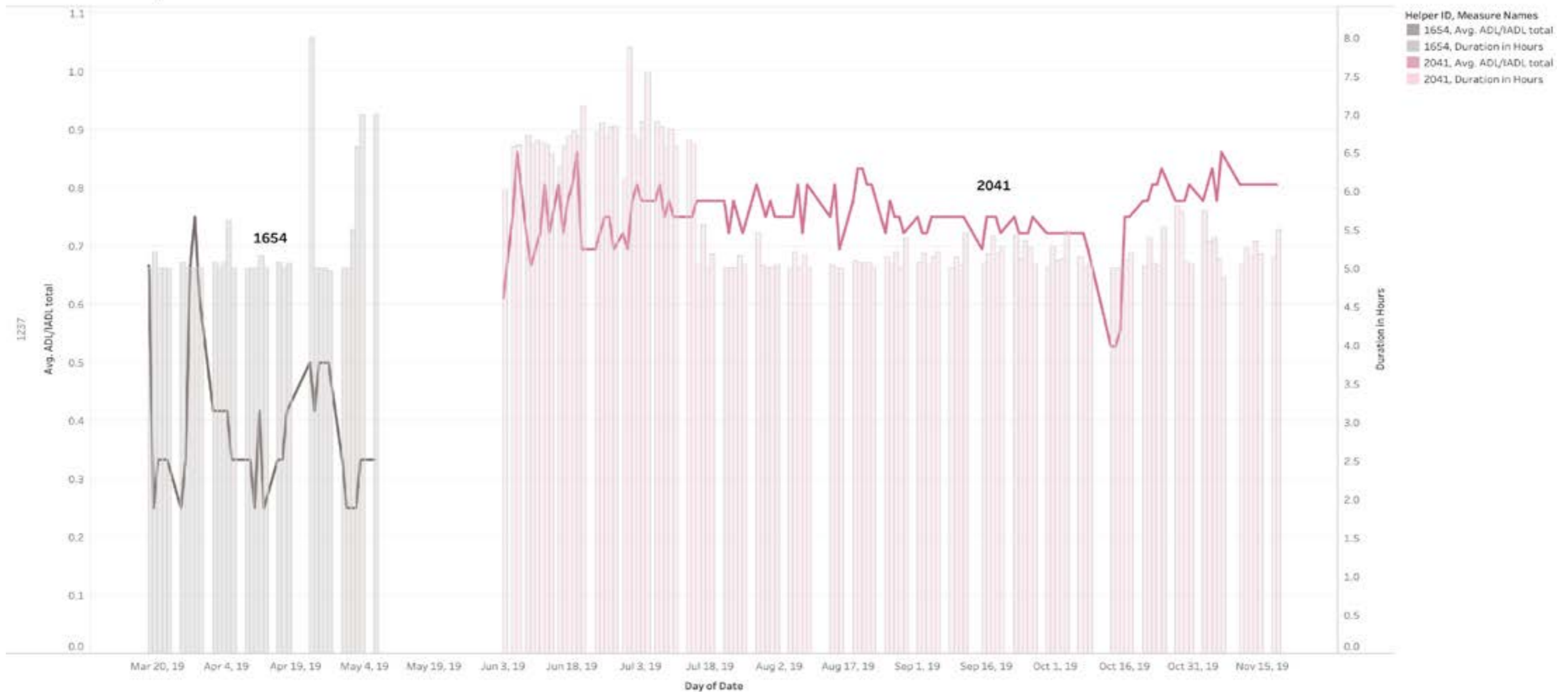
Case Study 875
ADL/IADL Intensity Score Over Time



The trends of Avg. ADL/IADL total and Duration in Hours for Date Day broken down by Customer ID. Color shows details about Helper ID, Avg. ADL/IADL total and Duration in Hours. For pane Average of ADL/IADL total: The marks are labeled by Helper ID. The data is filtered on In / Out of Helper Change Visual, which keeps In. The view is filtered on Customer ID, which keeps 875.

When we look at claimant 1237, we see that between caregiver 1 (#1654) and caregiver 2 (#2041), the scores immediately jump again, as well as the hours for the first month, but then for the remainder of care under caregiver 2 the hours remain similar to the time under caregiver 1.

Case Study 1237
ADL/IADL Intensity Score Over Time



The trends of Avg. ADL/IADL total and Duration in Hours for Date Day broken down by Customer ID. Color shows details about Helper ID, Avg. ADL/IADL total and Duration in Hours. For pane Average of ADL/IADL total: The marks are labeled by Helper ID. The data is filtered on In/Out of Helper Change Visual, which keeps In. The view is filtered on Customer ID, which keeps 1237.

In the case of claimant 1000, we see that they had another consistent stretch of over five months at around 80%. When caregiver 1 (#1189) left and caregiver 2 (#1441) took over not, only did the scores go down, but so did the hours of care.

Case Study 1000
ADL/IADL Intensity Score Over Time



The trends of Avg. ADL/IADL total and Duration in Hours for Date Day broken down by Customer ID. Color shows details about Helper ID, Avg. ADL/IADL total and Duration in Hours. For same Average of ADL/IADL total. The marks are labeled by Helper ID. The data is filtered on In/Out of Helper Change Visual, which keeps in. The view is filtered on Customer ID, which keeps 3000.

The Right Fit

Because THB has quantified this data for analysis, the industry can begin to understand how different caregivers can affect daily ADL scoring. Furthermore, with the same caregivers, consistent data should begin to cause fewer errors, less changes and more reliable data. If data is not being tracked in the same manner each time, there is no absolute way to know if a patient is getting better or worse. Better data informs a carrier if progress is being made or if the patient is falling behind. This is why THB's ability to collect, track and analyze this data can help bring more standardization to ADL scoring and overall patient care.

One major benefit of THB is that they provide comprehensive personality evaluations for the patient's and helpers. Often, a caregiver is assigned by being available versus being a good fit. THB ensures that the right caregiver is given to the right patient. If we look at predictive analysis of THB data, this matching system should help provide more compatible caregiver/patient relationships, thus beginning to eliminate the need to change caregivers. The industry should begin to see substantial improvements in overall patient care and consistency in collected data.

The Helper Bees method of matching clients and caregivers not only gives us a more in-depth understanding of data but gives the patient and caregiver a better chance of establishing a long-term relationship. THB progress towards better data and more suitable relationships should better inform carriers of the level of care going on with each claimant, as well as ultimately strengthen overall patient care.




At the end of the day, changing caregivers may be necessary for some circumstances, but through more tactical training and in-depth education, as well as creating a better fit for a caregiver and patient at the start, some of these unnecessary errors can begin to be eliminated, as well as fundamentally providing better care.



Company

The Helper Bees' goal is to use data to understand how to enable aging in place. This is accomplished through an industry-first innovative technology platform that collects data from various touchpoints from both in-house and networked staff. These key insights are gathered as personalized services are delivered by teams of nurses, care managers, and caregivers (agency and private), then mined by a team of data scientists. This model enables is a radically different way to power aging in place.

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