HealthPartners®

HealthPartners' Attribution Technical Paper

Assigning Accountability to Health Care Costs

An Observational Study of Assigning Health Care Accountability

As the United States grapples with the challenge of exploding health care costs and drives transformation of health and health care delivery to improve population health, deliver an exceptional experience, and improve affordability, topics that might seem mundane take on great importance. Specifically, there becomes a need to discuss assigning accountability and the process for appropriately measuring that accountability.

Accountability for health care affordability can ultimately be assumed as a societal responsibility since many social determinants of health are the largest drivers of health care costs (e.g. access to care, environment, cost of living, public assistance, etc.). However, operationally there are factors that can only be controlled or impacted at certain levels within the health care system and as the level of measurement gets further away from the patient, the more factors influence the cost of care. Knowing which factors influence cost at each level of measurement is a necessary question to consider in any cost evaluation. For example, when measuring geographic regions or states, all costs associated to all members in the community should be included. In contrast, when individual providers are measured, only patients and costs under their control should be considered, which includes cost drivers inherent to the provider's local market. The term "under their control" has spurred conversation as some providers feel they can only control the care they deliver directly, whereas others feel a primary care physician should be able to influence the entirety of a patient's care including his/her specialty usage from referral partners and patient behavior choices.

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In Minnesota, the multi-stakeholder community collaborative, MN Community Measurement, has agreed to a community standard to assign a patient's total cost of care to a single primary care provider. Attribution is defined as the method to which a patient is connected to a health care system, provider or physician and takes responsibility for the care of that patient. Because care is delivered to the patient, a provider's ability to manage patient costs under their control should be attributed to them. The collaborative has determined that the primary care practice is the party that should be held accountable for the entirety of a patient's care. While other providers' cost effectiveness will be measured, their measurement will be more focused on the care they are acutely responsible for (e.g., specialists).

As in many markets across the country, patients in Minnesota typically access care without the requirement of declaring their choice of a primary care provider. A member is also free to seek care directly from a specialist without a referral from a primary care physician. While this method allows for greater patient choice and flexibility, it creates a challenge for measuring provider health care quality and cost efficiency. We then need to ask, "Who is responsible for a member's care so that we may measure and report on their performance?" In this technical paper, we will discuss various methods of attribution commonly used for Total Cost of Care assessment, which aided in the formulation/adoption of a single community definition.

Introduction

Definitions

Attribution is the term that describes how health plans and others determine which provider is responsible for a member's care, when prospective patient selection is not available. Milliman defined attribution in January 2011: "Assigning a provider or providers, who will be held accountable for a member based on an analysis of that member's claim data. The attributed provider is deemed responsible for the patient's cost and quality of care, regardless of which providers actually deliver the service."[i] Attribution is more complex than might appear on the surface as the various input criteria and methods affect the patient provider assignment.

Attribution Uses

Attribution has utility across many important innovations in health care payment reform. Accountable Care Organizations (ACO), Patient-Centered Medical Home (PCMH) programs, health plan risk sharing/shared savings contracts and government or community-based measurement organizations use varying forms of patient attribution to assign accountability of patient care to a provider. Perhaps more important, patients may use the results that depend on attribution models to make decisions about their own care.

The prominence of these innovations and their impact on provider payment methods/mechanisms reinforces the need for standardization. The underlying attribution methods will continue to face scrutiny as payment reform models evolve and providers take on greater risk-sharing contracts that tie payment to performance and outcomes and not to volume.

There are two main components of attribution central to patient-provider assignment: What information organizations include in attribution and how they evaluate it?

What are the types of service and places of service included?

Providers perform many types of services and they do so in various locations, both physical and virtual. Typically, organizations use provider generated medical claims data to identify the patient-provider relationship. The various types of services organizations use to define the patient-provider relationship include evaluation and management visits, medical procedures, laboratory and radiology services, immunizations, etc. The care delivery settings where a patient receives these services also affects attribution and include office setting, outpatient, inpatient, urgent care, patient's home, internet, or telephone.

As care delivery is redesigned and transformed, methods of attribution and the services included will need to evolve in order to remain aligned. Ultimately, our goal is to identify providers that provide high quality and an exceptional experience at an affordable cost, those who provide the highest value health care for our patients. In order to identify high value, specifically in regards to affordability, we

must identify the most cost effective care models. By simultaneously evaluating patient experience and health outcome results we have the ability to subset providers who demonstrate high clinical quality and patient experience at a lower cost. Attribution is the key method contributing to sound comparative performance reporting of the cost effectiveness part of the equation. Evaluating evolving care models and being open to modifying attribution over time is necessary for rewarding care delivery system innovation. For example, replacing the traditional face-to-face fee-for-service model with an equally effective virtual care model at a monthly case rate payment can be a more effective way to provide high quality and efficient care at a better price.

How are the types of service and places of service evaluated?

Regardless of the medical data included, meaningful attribution requires a credible method to determine the responsible provider. The following are the key attributes of the three main methodological elements organizations currently use in the market:

- **Prospective vs. Retrospective**

  Prospective attribution uses historical claims to identify the patients included in a providers' patient roster prior to the start of a defined evaluation period, commonly twelve months. Organizations use prospective attribution in full risk and/or pre-payment arrangements or where the intent is to drive change in individual patient care and operations. Retrospective (also referred to as concurrent) attribution also assigns patients to providers based on historical claims. In this case, though, organizations perform attribution at the end of the period measured, and thus ensure the patient actually received care from the attributed provider. Retrospective attribution is most commonly used in population measurement and Total Cost of Care contracts and the results are typically updated on an ongoing cycle throughout the measurement period. For example, the measures may refresh quarterly throughout the twelve-month evaluation period.

- **Single vs. Multiple**

  Literature defines single attribution as an assignment of a patient to one provider group for accountability, whereas multiple attribution assigns a patient (or "portions" of a patient) to more than one provider group based on services or costs.[i]

- **Majority vs. Plurality**

  Attribution methods need to decide who receives assignment based on whether a patient receives a majority or a plurality of their care from a provider. Majority is defined as more than 50% of care or costs whereas plurality is the assignment of a patient to the provider with the largest proportion (most) of care or costs.[i]

Methods

The goal of attribution is to best reflect the patient-provider relationship. It is important to keep this in mind when evaluating attribution methods. All attribution methods examined here are retrospective, single attribution methods as is common for Total Cost of Care assessment for commercial payers. The methods differ in their application of delivery setting, service types, and majority/plurality criteria (see Appendices A and B for detailed specifications):

A. Most Visits: All Settings – The highest percentage of primary care visits in all care settings.

B. Most Visits: Office or Outpatient (OP) – The highest percentage of primary care visits in office and outpatient settings.

C. Most Evaluation and Management (E&M) Visits – The highest percentage of primary care E&M visits.

C1. Most Visits: Expanded E&M – The highest percentage of expanded primary care E&M visits.

D. Majority of E&M Visits – Greater than 50% of primary care evaluation and management (E&M) visits.

E. Majority of Dollars: All Settings – Greater than 50% of primary care dollars.

E&M Definition

E&Ms included in Method C:	99201- 99215, 99304 – 99350 and HCPCS G0402, G0438-9
Expanded E&Ms included in Method C1:	99201- 99215, 99304 – 99350 and HCPCS G0402, G0438-9 + Preventive Medicine Services E&M codes 99381 - 99397 + Maternity Care and Delivery Codes 59000 - 59899

Analysis

Primary Care Attribution Assumptions

Our analysis of primary care attribution used HealthPartners' professional, primary care commercial claims with dates of service between January 1, 2010 and December 31, 2010. The database used for this analysis represents approximately 800,000 members. We excluded attribution to convenience care clinic settings in all the models due to low volumes and the temporary nature of these interactions (Appendix B).

Table 1 illustrates the percent of members attributed in each method.

- The Most Visits in All Care Settings (A) casts the widest net with 68.3% of members attributed.
- The Most Visits Office/OP (B) reduces the attributed membership to 67.6%.
- The Majority of Dollars method (E) closely matches these levels of attribution at 67.8%.
- The Most Visits E&M (C) results in fewer members attributed (53.1%).
- The Most Visits: Expanded E&M (C1) method most similarly aligns with Most Visits Office/OP (B) in terms of members, high cost services, and Total Cost Index variation.
- Method C1 increases the percent of members from method C by 13.5% to 64.6% of members. This is 3% less than method B, Most Visits Office/OP.
- The Majority of E&M Visits (D) attributes the fewest members (51.9%).

Table 1

Attribution Status	(A) Most Visits All Settings	(B) Most Visits Office/OP	(C) Most Visits E&M	(C1) Most Visits Expanded E&M	(D) Majority of E&M Visits	(E) Majority of Dollars
Attributed Members	68.3%	67.6%	53.1%	64.5%	51.9%	67.8%
Primary Care Users, Not Attributed by Model	-	0.7%	15.2%	3.8%	16.4%	0.5%
Non-Attributed Members	17.3%	17.3%	17.3%	17.3%	17.3%	17.3%
Non-User Members	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Primary Care Services – Differences Between Method B and Method C1

- Over half of the members not included in method C1 that are included in method B had immunizations [Table 2].
- The expansion of method (C) to include the expanded services (C1) accounted for nearly all of the difference in admissions between methods B and C. This is because the majority of difference in admissions is specifically related to deliveries [Table 4].
- The Total Cost Index (TCI) position of each group is relatively similar across the six attribution methods. The Most Visits: Expanded E&M (C1) produced the least variation (from low to high) of any method analyzed [Table 8].

Table 2

Differences Between Method B and Method C1	
Primary Care Services	Percent Members
Immunizations	51%
Lab & Pathology	33%
Surgery*	12%
Radiology	10%
Prof Admin Injectables	3%

*Mostly Skin Conditions (i.e. Lesion Removal)

Who are the non-attributed members? [Table 3]

Non-attributed members used the health care system in 2010; however, they did not have a primary care claim that met the conditions defined in attribution models. Table 3 shows the types of providers used by these non-attributed, health care users, applying a hierarchical approach to show the next level of care accessed. Starting with pharmacy only and drilling down to emergency department use, this is not attribution method dependent.

Table 3

Analysis of Non-Attributed Members	Percent Members
Pharmacy Only	2.4%
Specialists	3.2%
Ancillary Specialists (i.e. PT, Optometry)	4.7%
Convenience Care	1.4%
Emergency Department Only	0.4%
Extended Network	5.2%

Proportion of High Cost Services Captured by Attribution Method [Table 4]

Our results also consider the percent of admits, outpatient surgeries and emergency department visits for members attributed under the different methods. As expected, method A captures the most admits (93.6%), outpatient surgeries (91.3%) and emergency department visits (85.7%) in the attributed population. Conversely, method D captures the fewest across all three metrics [Table 4]. Capturing more services does not necessarily indicate a more desirable attribution method. The central question is whether the method most effectively infers the correct primary care provider-patient relationship. Because these services drive high cost and contribute to affordability issues, it is important to consider inclusion for use in total cost of care management.

All five models exclude a substantial number of emergency department visits (14.3%), as seen in Table 4, likely a result of the accessibility of the emergency department to all members, whether or not they go to a primary care clinic. Indeed, a significant number of these members are only seeking emergency department care and not in-office care and never show a claims-based connection to a primary care provider. Inpatient admits and outpatient surgeries are more likely to have a professional visit preceding the admission or surgery so the connection is much more reliable.

Table 4

Attribution Status	Percent of Admits (A) Most Visits All Settings	(B) Most Visits Office/OP	(C) Most Visits E&M	(C1) Most Visits Expanded E&M	(D) Majority of E&M Visits	(E) Majority of Dollars
Attributed Members	93.6%	91.6%	82.4%	90.8%	80.5%	91.9%
Primary Care Users, Not Attributed by Model	-	2.0%	11.2%	2.7%	13.1%	1.7%
Non-Attributed Members	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Attribution Status	Percent of OP Surgery (A) Most Visits All Settings	(B) Most Visits Office/OP	(C) Most Visits E&M	(C1) Most Visits Expanded E&M	(D) Majority of E&M Visits	(E) Majority of Dollars
Attributed Members	91.3%	90.9%	82.2%	88.8%	80.4%	90.3%
Primary Care Users, Not Attributed by Model	-	0.4%	9.1%	2.5%	10.9%	1.0%
Non-Attributed Members	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Attribution Status	Percent of Emergency Department Visits (A) Most Visits All Settings	(B) Most Visits Office/OP	(C) Most Visits E&M	(C1) Most Visits Expanded E&M	(D) Majority of E&M Visits	(E) Majority of Dollars
Attributed Members	85.7%	83.9%	77.5%	82.3%	75.2%	84.2%
Primary Care Users, Not Attributed by Model	-	1.9%	8.2%	3.4%	10.6%	1.5%
Non-Attributed Members	14.3%	14.3%	14.3%	14.3%	14.3%	14.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Comparison of Key Results Findings [Table 5]

Analysis of the five methods showed 95% of members attributed in all methods to the same provider group regardless of method. Further analysis showed 85.3% (A & E) to 89.8% (C & D) of attributed members visit only one provider group. Therefore, the variation in methods affects 10.2% to 14.7% of members where attribution logic determines the primary care provider. Members who visit more than one provider for primary care services would arguably benefit from enhanced care coordination and accountability by a single provider group. The variation in percentage of members with visits to more than one provider group across methods is the result of expanding the place of service care settings included by the method. Inpatient, urgent care or emergency department visits are inherently related to acute care treatment of a specific condition or conditions that result in that type of visit.[ii] Attribution users should consider the implications of the inclusion and exclusion criteria as it relates to accurately representing accountable provider-patient relationships as well as the effect of the relationships on reported performance.

Table 5

	Provider Groups Visited by Members		
Providers Visited by Members	Primary Care All Settings (A & E)	Primary Care Office/OP (B)	Primary Care E&M (C & D)
One Provider Group	85.3%	88.1%	89.8%
More Than One Provider Group	14.7%	11.9%	10.2%
Total	100.0%	100.0%	100.0%

Comparison of Three Key Results Across Attribution Methods (Tables 6, 7, and 8)

Beyond the attribution methods' ability to capture the largest portion of membership and high cost services for a population, it is important to consider the stability of the methods at the provider group level. To judge stability we evaluated three post-attribution results: Membership variability, Adjusted Clinical Groups (ACG) retrospective risk score and Total Cost Index (TCI). The methods for the ACG risk score and Total Cost Index utilize criteria consistent with HealthPartners' National Quality Forum endorsed Total Cost of Care method.[iii]

Analysis Method

We excluded commercial claims for adults over age 65 due to the potential for dual coverage with Medicare. We also excluded claims for babies under age 1 due to variability and lack of claims experience to build appropriate risk adjustment. Although all provider groups are included in the attribution process, the provider group analysis focuses on those provider groups in the Twin Cities metropolitan area with more than 600 members. This threshold aligns with over 80 community-based quality and patient experience measures in the Minnesota market, as well as the HealthPartners NQF endorsed total Cost of Care measures. To maintain consistency between methods and for comparison purposes, we truncated claims at $100,000 *(NQF-endorsed measures' truncation level has since been increased to $125,000)* for each member and used the ACG retrospective risk scores to adjust the TCI.

Table 6: Membership Variability

Compare Methods Across a Provider

Provider Group	Membership Index to Average (A) Most Visits All Settings	(B) Most Visits Office/OP	(C) Most Visits E&M	(C1) Most Visits Expanded E&M	(D) Majority of E&M Visits	(E) Majority of Dollars
Provider 1	1.06	1.06	0.87	1.06	0.86	1.09
Provider 2	1.07	0.99	0.92	1.05	0.92	1.05
Provider 3	1.10	1.09	0.87	1.00	0.85	1.08
Provider 4	1.04	1.05	0.92	1.04	0.91	1.05
Provider 5	1.09	1.11	0.85	1.03	0.83	1.09
Provider 6	1.10	1.04	0.92	1.02	0.88	1.04
Provider 7	1.09	1.09	0.92	1.01	0.87	1.02
Provider 8	1.03	1.05	0.92	1.05	0.91	1.03
Provider 9	1.04	1.05	0.93	1.03	0.92	1.03
Provider 10	1.06	1.06	0.92	1.02	0.91	1.04
Provider 11	1.10	1.09	0.86	1.03	0.85	1.08
Provider 12	1.09	1.09	0.84	1.05	0.83	1.09
Provider 13	1.04	1.05	0.92	1.03	0.91	1.04
Provider 14	1.06	0.96	0.94	1.07	0.92	1.05
Provider 15	1.10	1.10	0.86	1.03	0.83	1.08
Provider 16	1.12	1.11	0.81	1.06	0.80	1.10
Provider 17	1.12	1.07	0.86	1.04	0.83	1.08
Provider 18	1.09	1.08	0.88	1.03	0.85	1.08
Provider 19	1.07	1.08	0.90	1.02	0.88	1.05
Provider 20	1.10	1.07	0.86	1.05	0.83	1.10
Provider 21	1.08	1.08	0.88	1.04	0.86	1.06
Provider 22	1.08	1.07	0.90	1.01	0.86	1.08
Total Metro	**1.09**	**1.08**	**0.87**	**1.03**	**0.85**	**1.08**
Grand Total	**1.09**	**1.08**	**0.86**	**1.04**	**0.84**	**1.09**

Table 6 illustrates the members included or excluded from attribution in each model. To accomplish this, the tabulation indexes membership to the average membership for all methods for each provider group.

As expected, limiting the attribution process to E&M visits only (C) and (D) resulted in the fewest members attributed. Conversely, using the most visits in all primary care visits (A) and the most office/outpatient visits (B) produced more members attributed in each provider group.

Table 7: Adjusted Clinical Groups Index Variability

Compare Methods Across a Provider

Compare Methods Among Provider

Provider Group	ACG (A) Most Visits All Settings	(B) Most Visits Office/OP	(C) Most Visits E&M	(C1) Most Visits Expanded E&M	(D) Majority of E&M Visits	(E) Majority of Dollars
Provider 1	1.21	1.21	1.39	1.24	1.37	1.22
Provider 2	1.00	1.02	1.09	1.01	1.09	0.98
Provider 3	0.93	0.94	1.07	0.98	1.07	0.93
Provider 4	1.00	0.99	1.10	1.02	1.10	0.96
Provider 5	1.13	1.14	1.32	1.17	1.31	1.12
Provider 6	1.08	1.11	1.22	1.11	1.22	1.07
Provider 7	0.96	0.96	1.08	0.99	1.07	0.96
Provider 8	1.11	1.13	1.24	1.13	1.24	1.07
Provider 9	0.98	0.99	1.08	1.01	1.08	0.96
Provider 10	1.10	1.11	1.22	1.12	1.22	1.09
Provider 11	1.07	1.07	1.24	1.11	1.24	1.06
Provider 12	0.82	0.83	0.99	0.87	0.99	0.83
Provider 13	1.11	1.11	1.22	1.13	1.21	1.09
Provider 14	1.02	1.07	1.12	1.02	1.11	0.97
Provider 15	1.07	1.06	1.21	1.09	1.21	1.06
Provider 16	1.00	1.00	1.19	1.03	1.19	0.99
Provider 17	1.03	1.05	1.20	1.06	1.19	1.02
Provider 18	1.08	1.08	1.22	1.10	1.22	1.08
Provider 19	1.21	1.21	1.37	1.26	1.34	1.17
Provider 20	1.62	1.57	1.76	1.60	1.76	1.62
Provider 21	0.76	0.76	0.88	0.79	0.87	0.75
Provider 22	1.43	1.33	1.45	1.36	1.44	1.48

Table 7 shows the Adjusted Clinical Group index variation across the five attribution methods. To accomplish this, the tabulation indexes the provider's ACG score to the plan average ACG score of 1.00. The plan average includes users and non-users.

In general, methods C and D had the highest ACG index, whereas methods A and E had the lowest. Methods C and D include the fewest number of members and exclude the greatest number high cost services (Tables 1 and 3).

Table 8: Total Cost Index Variability

Provider Group	TCI (A) Most Visits All Settings	(B) Most Visits Office/OP	(C) Most Visits E&M	(C1) Most Visits Expanded E&M	(D) Majority of E&M Visits	(E) Majority of Dollars
Provider 1	0.81	0.81	0.81	0.81	0.81	0.80
Provider 2	0.86	0.87	0.85	0.85	0.84	0.85
Provider 3	0.88	0.89	0.88	0.89	0.88	0.87
Provider 4	0.90	0.90	0.91	0.91	0.91	0.89
Provider 5	0.91	0.91	0.91	0.91	0.92	0.91
Provider 6	0.93	0.93	0.92	0.92	0.93	0.92
Provider 7	0.94	0.93	0.94	0.93	0.94	0.91
Provider 8	0.91	0.94	0.90	0.94	0.90	0.90
Provider 9	0.95	0.95	0.95	0.96	0.94	0.94
Provider 10	0.95	0.96	0.94	0.95	0.94	0.95
Provider 11	0.96	0.96	0.96	0.97	0.97	0.96
Provider 12	0.96	0.97	0.97	0.97	0.97	0.97
Provider 13	0.97	0.98	0.98	0.98	0.98	0.96
Provider 14	0.97	0.99	0.94	0.97	0.93	0.91
Provider 15	1.01	1.00	0.98	1.00	0.99	1.00
Provider 16	1.02	1.02	1.03	1.02	1.03	1.02
Provider 17	1.03	1.03	1.04	1.03	1.03	1.04
Provider 18	1.04	1.04	1.04	1.04	1.04	1.04
Provider 19	1.05	1.05	1.02	1.03	1.02	1.05
Provider 20	1.11	1.07	1.05	1.06	1.05	1.14
Provider 21	1.08	1.09	1.07	1.07	1.06	1.08
Provider 22	1.49	1.45	1.46	1.44	1.47	1.56

Compare Methods Among Provider

Table 8 shows the Total Cost Index variation across the five attribution methods. To accomplish this, the tabulation indexes a provider's total cost of care to the metro average total cost of care to create a TCI for all methods for each provider group.

While the cost position of each groups is relatively similar across the methods, methods A and E had the most variation (range from low to high), while method B had the least variation.

General Findings

- All attribution methods produce similar relative cost positions by provider group using the HealthPartners NQF endorsed Total Cost of Care[iii] measure consistently among the methods. [Table 8]
- Methods A and E produce the most variation in TCI across provider groups, while method B had the least variation. Higher TCI variation across provider groups for methods A and E is due to the inclusion of members with very low costs only (urgent care) and very high costs only (inpatient admissions) where there is not an established primary care provider relationship outside of the inpatient, emergency department or urgent care setting. These extremes are not attributed in the other methods. Whether these members should be included or excluded depends upon the user's definition of a provider-patient accountable relationship. [Table 8]
- Method A increased member attribution minimally across all providers compared with method B [Table 1]. However, inter-method provider group variation was more dramatic for both ACG and TCI due to the expansion to all primary care places of service in method A. [Table 7] For example:
    - Provider Group 14 offers urgent care services. The inclusion of urgent care place of service into the attribution method results in this provider being attributed more members with lower than average ACG scores as these members mostly get care for common acute illnesses. The result was similar for other provider groups that also offer urgent care services. [Table 7]
    - Provider Group 20 has a strong hospital affiliation/presence; therefore, method A introduces more members with an inpatient admission, which drives up a provider's costs. Using a diagnosis-based risk adjustor will only account for a portion of the patient's costs and not all of the cost of the admission. [Table 7]

- Methods C and D attribute the fewest number of members. These methods also produced some of the highest ACG scores by provider. These methods exclude two distinct groups of members: low intensity members and high intensity members without a primary care E&M. This accounts for approximately 15% fewer members and 11% fewer admissions than the other three methods. [Tables 1, 4, and 7]
- Methods D and E are more likely to exclude members that have multiple providers coordinating their care, as it is more difficult for a single provider to achieve the greater than 50% threshold to be attributed the member.

Table 9: Year-Over-Year Turnover

Continuously Enrolled Members Attributed in Year 1	
Attribution Status	**% Attributed Members**
Non-User Members Year - 2	5%
Non-Attributed Members Year - 2	7%
Total Members with Discontinuous Attribution	12%
Attributed to Year 1 Group in Year 3	6%

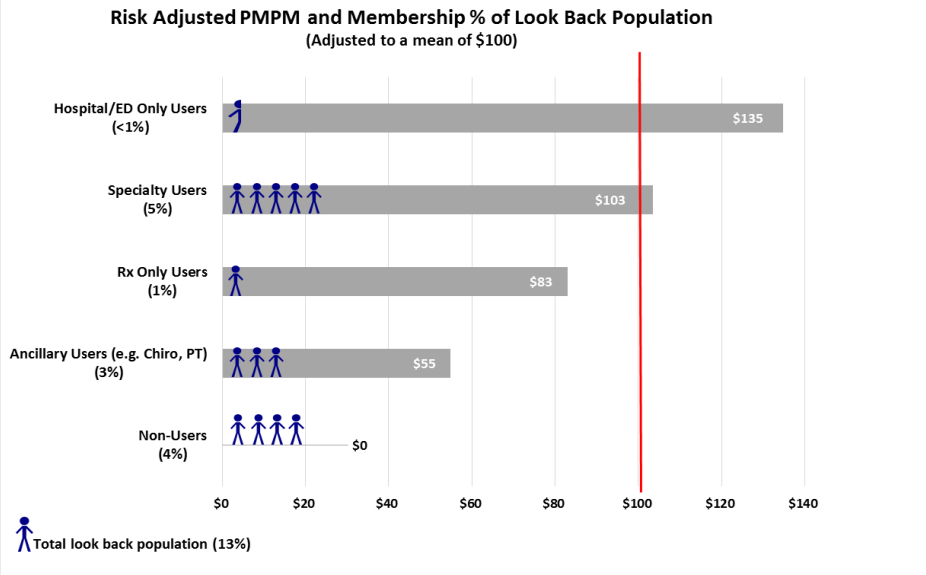
Table 9: In a three-year review of administrative claims for an attributed population over time, HealthPartners observed 5% of members in year two did not incur any claims and an additional 7% of members did not use primary care services totaling 12% of members with discontinuous attribution. However, a review of claims in year three indicates that half, or 6%, of those "discontinuous" members sought care from the same group they were originally attributed to in year one.

Look Back Period or History

According to a summary of best attribution practices from the Brookings-Dartmouth Accountable Care Organization, at least one year of claims history and giving preference to plurality methods enhances stability in assignment.[iv] Evolving care seeking behaviors and coverage turnover of commercial members poses a challenge for attribution, particularly as attribution periods expand. Staying with one year of claims history ensures correct attribution and enables compliant data sharing with providers. Further, if the method is consistent over time and payment approach matches well, there is no gain or loss with shared savings opportunities based on TCOC performance.

Before any attribution technique is deployed, it is necessary to determine which costs are intended to be included in the measure. If the measure is designed to evaluate the cost effectiveness of the care a patient receives in a given time period, a visit to a provider in that period must be included and a look back period is not necessary. Inclusion of a look back period is appropriate if the measure is designed to evaluate patient care management that extends beyond 12 months of a patient-provider interaction. It can be assumed however, that little to no interaction between the provider and patient could mean the provider is less likely to be actively managing the patient. It is also important to keep in mind that a look back period will introduce members that did not consume any health care services, have pharmacy only services or have only been seen by a specialist.

The introduction of look back members increases the random variability of the cost evaluation. Look back members have bi-modal risk adjusted results, meaning some have very low costs while others have extremely high costs. The graph to the right depicts the distribution of look back members by category for unattributed members in the measurement year that were attributed to a provider group in the previous year. An example of the bi-modal effect is seen for 'Specialty Users' who have a large proportion of look back members and higher than average costs compared to 'Ancillary Users (e.g. Chiropractic, Physical Therapy)' who also have a large proportion of look back members, but who have lower than average costs. Inclusion of look back members can increase or decrease performance results based on the proportion of people in each category and their varying costs. Marrying risk adjustment with cost evaluation time periods produces the most reliable results (i.e., including costs with the corresponding diagnosis). Determining the purpose of the measure will dictate whether or not the inclusion of a look back period is necessary.



Summary of Findings

Table 10: Summary of Results from the Previous Tables and Details of How the Attribution Method Characteristics Influence the Results

Method	Method Assessment
(A) Most Visits All Settings	• This method attributes the highest percentage of members and captures the largest portion of high cost services. • It differs from method B primarily by inclusion of urgent care, inpatient hospital and emergency department places of primary care service. • Provider group variation in services offered, such as urgent care, affects the number of attributed members, both for those with no other health care use and those attributed in other methods.
(B) Most Visits Office/OP	• This method attributes a similar percentage of members and portion of high cost metrics as method E. It is slightly less than method A. • Office visits, laboratory, radiology and immunizations are included in this model. • Inpatient only physician visits, emergency room only visits and urgent care only primary care visits are not included in this model.
(C) Most Visits E&M	• This method has the second lowest capture rate of members attributed and portion of high cost services. • It limits attribution to face-to-face office visits with primary care providers, while excluding less expensive immunization and lab only office visits.

(C1) Most Visits E&M Expanded E&M	• This method has the fourth highest capture rate of members attributed and most similarly aligns with method B in terms of members, high cost services, and Total Cost Index variation. • It expands Method C's primary E&M visits to include preventive medicine services and maternity care and delivery.
(D) Majority of E&M Visits	• This method attributes the fewest members and captures the smallest portion of high cost services. • It also excludes less expensive immunization and lab only services similar to method C. • This method misses members with an equal split of E&M visits between two or more providers. Thus, this method has opportunity to exclude a portion of members who could potentially benefit from more management. It also misses a patient seeking primary care services from multiple providers since they are less likely to achieve 50% of E&M visits.
(E) Majority of Dollars All Settings	• This method has a similar capture rate of members and portion of high cost metrics as method B. It is slightly less than method A. • It includes dollars for primary care providers in inpatient, emergency department, urgent care and skilled nursing facility locations. • This method is price sensitive. A primary care provider's contracted rates drive an individual member's attribution toward higher cost providers. • All things being equal, higher priced providers would tend to be attributed a member. • This method is more likely to not attribute members that have seen multiple providers as it is less likely for a single provider to contribute more than 50% of the spend when there are multiple providers involved in the patient's care. These are precisely the types of members who could potentially benefit from enhanced management.

Discussion

Common themes or concerns with attribution methodologies tend to emerge in discussions with stakeholders. We will address these further below.

This report shows that in a group practice environment, whether multispecialty or single primary care specialty practice, attribution at the group level yields similar portion of attributed members and corresponding services for three methods: most visits all settings (A), most visits office/OP (B) and majority of dollars (E). Attributing patients based on visits is preferred over dollars because the differences in fee schedules could drive the results rather than whom the patient is actually seeing more often. This is a key difference and an important feature of attribution as it more accurately identifies who has the greatest opportunity to guide and direct patient care. Methods that focus on the majority of office visits (D) and majority of payments (E) rather than plurality may be omitting the patients who could benefit most from added accountability for care coordination. When care comes from several providers, it is mathematically unlikely any one provider will achieve greater than 50% share of the care. As a result, patients with the most fragmented care may have no identified accountable primary care provider.

When deciding to use a look back period, the benefit of including additional members should be balanced against the random variability introduced in the results. In addition, using a look back period in conjunction with the majority method would be contradictory for members with less than 50% of visits. The majority method excludes current visits simply because a provider does not have a

minimum of 50% of the visits and by coupling this method with a look back period, the experience from the previous year would end up having more weight for assignment than the current year with more recent experience.

Using Administrative Data to Attribute

Many markets operate largely as 'open access', meaning patients do not affirmatively designate a primary physician. This fact creates problems for those working to transform care. As we turn to medical homes and accountable models of care, the lack of a patient declaration of which they consider their primary care provider leaves the provider uncertain of their role. It also makes it difficult for payers to design new models of reimbursement that reward efficient, well-coordinated care. Payment reforms that evolve fee for service payment toward performance based or global payment methods depend on connecting a patient to a provider based on the choices made by the patient as they use the care system. Using administrative claims data to understand these care-seeking behaviors is becoming more widely accepted by providers as they learn how to operate in the context of new payment models.

Care System Configuration

When used in Total Cost of Care (TCOC) performance monitoring, some may see attribution methods that tightly define a care system configuration as desirable. However, inclusion of the largest variety of visits and settings would tend to differentiate those care systems that do the best job of efficiently managing care through well-constructed and coordinated care models and system configuration. To that end, the most visits/all settings method (A) introduces variation by virtue of care system configuration and inclusion of services, and would tend to reveal care that is less well coordinated and more fragmented. In noticing these signals in the data, primary care providers can work to refine their care model to reduce this fragmentation and improve outcomes. It could also drive systems to be sure they have available, low cost alternatives for their patients to take the best advantage of the impact these alternatives can have on Total Cost of Care. Conversely, inpatient, urgent care or emergency department visits, as stated above, are inherently related to acute care treatment;[ii] when considered in absence of other primary care visits outside of these settings, they may be less representative of patient selection of a primary care provider. Excluding these places of service, from the attribution method eliminates the risk that a patient would be attributed solely based on these types of interactions or that these places of service would compete equally with and potentially trump a physician accessed by a patient for their ongoing care management.

Another consequence of this broader method, the inclusion of the highest cost patients, deserves consideration. By extending some measure of accountability to these cases, the importance of thoughtful selection of referral partners and care delivery venues becomes clearer for providers working outside a large multi-specialty system. Within vertically integrated systems, this inclusion of the sickest patients would tend to drive focus on excellence and efficiency across the full continuum of the care provided by the group. These points apply when attribution at the primary care level is the sole objective. However, when it comes to attribution where the patient care depends on the effective coordination between primary care and specialty care, attribution of a patient's specialty care

services based on more tightly defined peer groups may make sense. This can be particularly helpful as primary care providers look to understand which of their specialty partners deliver high quality, affordable care. This is important as they consider shifts in their referral patterns to match the needs of their population of patients. These data are potentially helpful in both single-specialty, community referral styles of practice as well as in larger multispecialty groups. This works only if the primary care provider can view the summarized performance of a specialist with their full attributed population and not just those patients shared by the primary and specialty providers.

Moving to Select a Single Method

The overriding question remains: can communities agree on a standard attribution method that is acceptable to all stakeholders? As implied in the definitions, attribution methods involve making an educated assumption about the patient/provider relationship; and therefore, one might assume that there are significant implications for the method used to make the assumption and variation in the results. Our analysis of variations of retrospective, single attribution methods shows that the majority of the time, regardless of the variations in the method, the result is virtually the same with the exception that there is some variation in the percentage of the population different methods are able to attribute. These results suggest that selection of a single standard makes sense for a market, thus avoiding confusion arising from different methods that reach largely the same conclusions anyway. In the meantime, the variation is not significant enough to slow improvement efforts on a provider's panel.

While it is understandable that providers want complete consistency across different payers in attribution methodology, there are some necessary differences among key populations. These differences prevent globally consistent methods from working across all populations uniformly. Medicare enrollees are continuous, Medicaid enrollees experience the most turnover in coverage and coverage type and Commercial enrollees, while more stable than Medicaid, also experience turnover in coverage with plan changes over time. The focus of this paper is attribution, but the introduction of continuous enrollment criteria, which ensures stability and accuracy of TCOC performance, are necessarily different for these three populations. Within these populations; however, consistency is desirable and achievable.

Looking Forward

Attribution methodologies will need to adapt as the health care system advances. Ongoing testing of methods should continue as care systems evolve through innovations such as: the use of virtual and telephonic visits, market acceptance of resource use measurement and as the roles of specialists change. There are a handful of effective attribution characteristics that will continue to be imperative as the system advances.

- The best model balances patient choice with number of attributed patients; more is not necessarily better.

- Visits and services are preferred over dollars spent due to the influence and variation of provider's fee schedule in the commercial market.
- Care settings, such as inpatient, emergency department and urgent care, are not preferred as they do not reflect patient choice.
- Consistent care system configuration should be considered because it can drive variation.
- Plurality methods are preferred over majority methods that can inadvertently exclude high cost patients.

About HealthPartners

Founded in 1957, HealthPartners is the largest consumer-governed, non-profit health care organization in the nation. It is dedicated to improving the health of its members, patients and the community. HealthPartners provides a full-range of health plan services including insurance, administration and health and well-being programs. Since its combination with Park Nicollet in 2013, its care system includes more than 1,700 physicians; five hospitals; 52 primary care clinics; 22 urgent care locations; and numerous specialty practices in Minnesota and western Wisconsin.

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Appendix A: Attribution Method Detailed Criteria

Method	Method Criteria
Highest Percentage of Visits in all Care Settings* (Most Visits All Settings)	Highest percentage of primary care visits in any care setting. In the instance of a tie, the patient attributes to the most recent provider visited.
Highest Percentage of Office and Hospital Outpatient Visits* (Most Visits Office/OP)	Highest percentage of office and outpatient office visits. The place of service definition restricts claims to those with a place of service code of office visit (11) or outpatient hospital (22) as defined by The Centers for Medicare & Medicaid Services (CMS).[v] In the instance of a tie, the patient attributes to the most recent provider visited.
Highest Percentage of E&M* (Most Visits E&M)	Highest percentage of primary care visits with an E&M code. We defined E&M codes using the American College of Physicians Medicare Shared Savings/Accountable Care Organization Final Rule Summary.[vi] E&M codes include primary care services (HCPCS codes 99201-99215, 99304-99350) and annual wellness visits (HCPCS codes G0402, G0438, G0439). In the instance of a tie, the patient attributes to the most recent provider visited.
Highest Percentage of E&M Including Preventive Medicine and Maternity* (Most Visits Expanded E&M)	Highest percentage of primary care visits with an expanded E&M code. We defined E&M codes using the American College of Physicians Medicare Shared Savings/Accountable Care Organization Final Rule Summary.[vi] Expanded E&M codes include primary care services (HCPCS codes 99201-99215, 99304-99350), annual wellness visits (HCPCS codes G0402, G0438, G0439), preventive medicine services (HCPCS codes 99381-99397), and maternity care and delivery (HCPCS codes 59000-59899). In the instance of a tie, the patient attributes to the most recent provider visited.
Majority of E&M Visits (Majority of E&M Visits)	Majority of primary care visits with an E&M code. We defined E&M codes using the American College of Physicians Medicare Shared Savings/Accountable Care Organization Final Rule Summary.[v] E&M codes include primary care services (HCPCS codes 99201-99215, 99304-99350) and annual wellness visits (HCPCS codes G0402, G0438, G0439).
Majority of Dollars (Majority of Dollars)	Majority of paid dollars for primary care services delivered in any care setting.

*For all methods using the highest percentage, in the instance of a tie, the most recent provider visited for attribution was used. Analysis showed this occurred for only 2.5% to 3.5% of members depending on the method. One year look back of claims history was consistently applied across all methods.

Appendix B: Primary Care Attribution Assumptions

A primary care visit is defined as an 'encounter,' which is one member seeing one provider at one place of service on one day. Primary care is defined by the practicing provider specialty supplied by network physicians to the health plan on an annual basis. The practicing specialty chosen is then post-coded using the American Board of Medical Specialties recognized physician specialty and sub-specialty list.[vii] Specialties chosen for inclusion in primary care definition are based on Minnesota Administrative Rules and Definitions as:

> "A licensed practitioner such as a licensed nurse, optometrist, or chiropractor…or a licensed physician, either employed by or under contract with the health maintenance organization, who is in general practice, or who has special education, training, or experience, or who is board-certified or board-eligible and working toward certification in a board approved by the American Board of Medical Specialists or the American Board of Osteopathy in family practice, pediatrics, internal medicine, or obstetrics and gynecology."[vii]

Physician Assistants and Nurse Practitioners are included in the definition of primary care specialties in consideration of the inclusion of licensed nurses and chiropractors in the Minnesota Administrative Rules and Definitions as well as physician's assistants ability to bill directly under Minnesota state law.[viii]

Adolescent medicine	Emergency medicine	Gynecology
Adult medicine	Family medicine	Internal medicine
Certified nurse first assistant	General practice	Nurse practitioner
Certified nurse midwife	Geriatric medicine	Obstetrics and gynecology
Developmental-behavioral pediatrics	Preventive medicine	Pediatrics
	Women's health	Physician assistant

Convenience care clinics are identified by the Centers for Medicare and Medicaid Services (CMS) place of service code[iv] for walk-in retail health clinics and additionally by clinic name.

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[i] Panteely, Susan E. Whose patient is it? Patient attribution in ACOs. Milliman Healthcare Reform Briefing Paper. January 2011. http://publications.milliman.com/publications/healthreform/pdfs/whose-patient-isit.pdf.

[ii] Department of Health and Human Services, Centers for Medicare & Medicaid Services. 42 CFR Part 425 [CMS–1345–F] RIN 0938–AQ22 Medicare Program; Medicare Shared Savings Program: Accountable Care Organizations. Federal Register Vol. 76, No. 212, Wednesday, November 2, 2011 Rules and Regulation. Pages 50 - 69. http://www.gpo.gov/fdsys/pkg/FR-2011-11-02/pdf/2011-27461.pdf.

[iii] HealthPartners Total Cost of Care and Resource Use. https://www.healthpartners.com/tcoc.

[iv] Accountable Care Organization Learning Network. Patient Attribution Best Practices from the Brookings- Dartmouth Pilot Sites. http://www.acolearningnetwork.org/resources/patient-attribution.

[v] Medicare Claims Processing Manual. Chapter 26 – Completing and Processing Form CMS-1500 Data Set. https://www.cms.gov/manuals/downloads/clm104c26.pdf.

[vi] American College of Physicians Medicare Shared Savings/Accountable Care Organization (ACO) Final Rule Summary Analysis. http://www.acponline.org/running_practice/aco/rule_summary_analysis.pdf.

[vii] American Board of Medical Specialties. Recognized Physician Specialty and Subspecialty Certificates. http://www.abms.org/who_we_help/physicians/specialties.aspx.

[viii] Minnesota Office of the Revisor of Statutes. Minnesota Administrative Rules. https://www.revisor.mn.gov/rules/?id=4685.0100.