



HealthPartners®

# Total Cost of Care and Total Resource Use Validity Testing Analysis

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*The analysis and results included in this paper were reviewed and accepted by the National Quality Forum. Both measures were re-endorsed in September 2017.*

## Purpose

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To evaluate the Total Cost of Care (TCOC) and Resource Use measures by comparing the findings and correlations to other known information sources and metrics to determine the validity of the measures.

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## Overview of Analysis

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The Total Cost of Care and Resource Use are measures of a provider's risk adjusted cost and resource use effectiveness at managing their primary care attributed population across the care continuum. This analysis compares known utilization and cost variations to the variations seen in the measures in order to evaluate the validity of the measures.

The Total Cost of Care and Resource Use measures were applied to HealthPartners primary care providers as per the specifications of the measures. Additional standard utilization metrics were also applied to the underlying data in the non-risk adjusted and risk adjusted forms. The total cost index (TCI) and total resource use index (RUI) findings are compared by provider group to the non-risk adjusted and risk adjusted utilization metrics to determine the correctness of conclusions.

## Methodology

The Total Cost of Care and Resource Use measures should differentiate between providers based on the cost per member and/or consumption of resources per member given all other factors are equal. The ACG adjustment controls for variations in the illness burden of the patients and the peer grouping controls for various patient demographics, provider types and types of product. The remaining factors reflect what the provider can control.

The Total Cost of Care and Resource Use measures should show various strengths of correlations to known utilization metrics. These correlation strengths will depend upon how fully encompassing the utilization metric is within the component being measured and whether the metrics are risk adjusted. For example the admit count utilization measure should be highly correlated to the inpatient resource use as the only factor not accounted for in the admit count measure is intensity (aka: level of treatment). When risk adjustment is applied the correlation will be reduced as the illness burden variation is removed.

The Total Cost of Care and Resource Use measures are designed to evaluate the entire patient and/or provider. Since a person centered measure does not currently exist, the utilization metrics are being used as a proxy to evaluate the correctness and accuracy of the conclusions drawn by the Total Cost of Care and Resource Use measures. These comparisons and correlations should be considered as directional and are not absolute. The utilization metrics do not measure intensity or cost per unit and are targeted to measure a specific service therefore the correlations to the Total Cost of Care and Resource Use need interpretation as high correlation are not always the ultimate goal or the expected result.

## Analysis Overview

- The Pearson correlation coefficients are calculated at the network level between provider groups. In general, the correlation coefficient is an indicator of the level of connection or influence two measures have on each another.
- The correlation coefficient scores range from negative one to positive one, with the closer to either value indicating the more influence or connection and the close to zero indicating no influence.
- When the correlation is positive both values move in the same direction and when the correlation is negative the values move in the opposite direction.
  - Positive correlation example: the more professional Evaluation & Management (E&M) visits that are incurred, the more professional total spend is accumulated. In this case the correlation coefficient is expected to be between 0.6 and 0.8 as E&M visits drive a significant proportion of the professional costs.
- Network Overview Non-Risk Adjusted Metrics
  - Correlations between the ACG score and the non-risk adjusted cost per member per month (PMPM) and Total Care Relative Resource Values (TCRRV) PMPM.



- Correlations between known utilization metrics and the ACG risk score and the non-risk adjusted cost PMPM and TCRRV PMPM.
- Correlations between known utilization metrics within specific places of service and the non-risk adjusted cost PMPM and TCRRV PMPM for the corresponding places of service.
- Network Overview Risk Adjusted Metrics
  - Correlations between the ACG score and the Total Cost Index (TCI) and Resource Use Index (RUI).
  - Correlations between known utilization metrics and the overall TCI and RUI.
  - Correlations between known utilization metrics within specific places of service and the TCI and RUI for the corresponding places of service; however, Rx only has a TCI as there is minimal price variation between providers for pharmacy services.

## Member Population

- Members age 1 – 64 included (babies < 1 and members age 65+ are excluded).
- Members are included if they are enrolled for a minimum of 9 months during the 12 month claims window.
- Commercial products only.
- Attributed members only.
- A member is assigned to the provider group that provides the largest percentage of the primary care office visits.
- In the event of a tie, the provider group with the most recent visit is attributed the member.
- Members that do not have a primary care office visit are excluded from attribution and TCOC.
- Primary Care Providers with more than 600 members that meet the above criteria.

## Network Overview

- HealthPartners primary care network consists of 66 individual provider groups that have 850 clinic sites.
- The total membership of the primary care attributed network is over 470,000 members in 2015.
- Provider group size vary from 600 to a few large systems with 40,000+ members.

## Metrics

- Total Cost Index – TCI: a provider's ACG risk adjusted total cost per member per month divided by the network average ACG risk adjusted total cost per member per month.
- Total Care Relative Resource Use Value Index – RUI: a provider's ACG risk adjusted total resource use per member per month divided by the network average ACG risk adjusted total resource use per member per month.
  - The Total Care Relative Resource Use Values (TCRRVs) place a relative value unit on all health care services and are the basis of the resource use index (see TCRRV documentation on [www.healthpartners.com/tcoc](http://www.healthpartners.com/tcoc)).
- Price Index – PI: a natural byproduct of the TCI and RUI. By definition the only variance between the TCI and RUI is that RUI is void of price.
- Each of these measures is repeated for the four major places of service, inpatient, outpatient, professional and pharmacy.
- Utilization metric indices are counts of distinct services compared to the peer group average.



- o These utilization metrics are risk adjusted through the ACG methodology, which is accomplished by creating expected value by age, gender, and ACG cell.

## Conclusions

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### Validity of Measure Components - Non-Risk Adjusted Correlations

- The Total Cost of Care and the Resource Use measures accurately and consistently identified providers that are low or high performers with conclusions supported by known utilization measures.
- There are high correlations between non-risk adjusted PMPM, ACG score and non-risk adjusted TCRRVs which indicate they are all good measure of resources.
- The ACGs, non-risk adjusted PMPMs, and non-risk adjusted TCRRVs have similar correlations to all utilization metrics which indicates the TCRRVs are performing as expected and are a solid measure of resources.

### Validity of TCOC and Resource Use Measures - Risk-Adjusted Correlations

- Both overall Price and Total Resource Use are highly correlated with TCI as expected.
- The indexed Total Cost of Care and Total Resource Use measure scores both have a high correlation to a risk adjusted composite utilization index score, which was developed as a proxy to measure total resource consumption (see [RUI vs. Risk adjusted Composite Utilization](#) Index section).
- The Total Cost of Care and Resource Use measures differentiate between provider groups accurately as supported by the risk adjusted service utilization metrics, resource use and price measures displayed in Appendix B. (see [Detailed Provider to Provider Analysis](#) section and [Appendix B](#)). A High to Low Provider Contrast Analysis supports this finding and can be found on page 9.

## Total Cost of Care & Resource Use Report

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Please refer to [Appendix A](#) for a full list of provider groups included in the evaluation. The table below provides the first five groups as a frame of reference and shows each provider group has an ACG score, Total Cost Index (TCI), Price Index, and a Resource Use Index and each of these are relative to the network total. The red line on the table in Appendix A divides providers between above and below the average TCI (1.00). There are also utilization metrics described in the Metric Overview section that are calculated for each provider group that are shown later in the analysis.

### Primary Care Provider Network Overview – Example Table

Commercial, Continuously Enrolled, Excluding Babies and 65+  
 Dates of Service within each Year  
 Indexed to the Network Average

Provider Group	Average ACG Score			TCI			Price Index			Resource Use Index		
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Provider 1	1.11	1.09	1.09	0.87	0.84	0.84	0.89	0.91	0.89	0.98	0.93	0.93
Provider 2	~	1.18	1.04	~	0.88	0.84	~	0.90	0.88	~	0.98	0.96
Provider 3	0.85	0.86	0.88	0.93	0.86	0.85	0.95	0.94	0.93	0.98	0.91	0.92
Provider 4	0.86	0.91	0.89	0.82	0.88	0.87	0.89	0.89	0.90	0.92	0.98	0.97
Provider 5	1.27	1.15	1.12	0.93	0.86	0.87	1.14	1.11	1.06	0.81	0.78	0.82

## Correlations Overview

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### Correlations Between ACG Score, Non-Risk Adjusted PMPMs, Non-Risk Adjusted TCRRVs, Risk Adjusted TCI, Price, and Risk Adjusted RUI

Since ACGs are an industry standard risk adjustment tool that measures expected resource use there should be strong correlations between it and the Non-risk adjusted PMPMs and Non-risk adjusted TCRRVs; however the TCRRV's correlation should be stronger as the Non-risk adjusted PMPMs are not a true unbiased measure of resources, as it is impacted by the unit cost of each of the providers within the analysis.

Metric	Correlation Coefficient	
	ACG	Non-Risk Adj PMPMs
Non-Risk Adj PMPM	0.62	1.00
Non-Risk Adj TCRRVs	0.88	0.78
ACG Risk Adj TCI	0.03	0.79
ACG Risk Adj RUI	0.14	0.45
Price	-0.09	0.57

- There is a high correlation between ACG score and the non-risk adjusted PMPM and TCRRVs which indicates that the non-risk adjusted PMPM and the non-risk adjusted TCRRVs are a good measure of resource use.
- There is a low correlation between ACG score and the risk adjusted TCI and RUI. This indicates that the risk score of a provider has no impact on a provider's ability to be a high performer.
- There is a lower correlation between the risk adjusted RUI and non-risk adjusted PMPMs than the risk adjusted TCI and non-risk adjusted PMPMs as the risk adjusted RUIs are not impacted by the cost per unit.
- There is a low correlation between price and ACG because ACGs measure expected resource use whereas price is not affected by the number or intensity of services received. Price on the other hand is solely based on the provider and their referral partner's per unit cost and since overall costs are influenced by that per unit cost, price is highly correlated with non-risk adjusted PMPMs.

## Non-Risk Adjusted Correlations

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### Correlations Between the Non-Risk Adjusted Place of Service Metrics and Non-Risk Adjusted PMPMs & Non-Risk Adjusted TCRRVs

There should be a correlation between the place of service utilization metrics and the non-risk adjusted PMPMs and TCRRVs of the corresponding place of service. The magnitude of the correlation is dependent upon the utilization metric's penetration within the place of service and the cost and/or resource intensity of the metric. The non-risk adjusted PMPMs correlation to the utilization metric will also be impacted by the unit cost of each of the providers within the analysis.

Non-Risk Adjusted  Service Category Metric	Correlation Coefficient	
	Non-Risk Adj Service Category PMPMs	Non-Risk Adj Service Category TCRRVs
<b>Inpatient</b> Admits/1000	0.67	0.82
<b>Outpatient</b> ER/1000	0.67	0.52
OP Surgery/1000	0.60	0.68
HighTech Rad/1000	0.45	0.67
<b>Professional</b> E&M/1000	0.63	0.71
Lab/Path/1000	0.77	0.83
Std Rad/1000	0.49	0.72
<b>Pharmacy</b> Rx/1000	0.73	0.80

**Inpatient:** There should be and are strong correlations between the admit rate to the non-risk adjusted PMPMs and non-risk adjusted TCRRVs as the only two factors not measured by the admits are the intensity and unit cost of the services performed.

**Outpatient:** There should be and are moderate correlations between the ER, outpatient surgery, and high tech radiology rates to the non-risk adjusted PMPMs and non-risk adjusted TCRRVs as these three utilization metrics combine to encompass approximately 65% of the total outpatient spend.

**Professional:** There should be and are moderate correlations between the E&M visits, Lab/Path services, and standard radiology to the non-risk adjusted PMPMs and non-risk adjusted TCRRVs as they represent 45% of the professional spend, but are also good indicators of patients that consume

medical services.

**Pharmacy:** There should be and are strong correlations between the pharmacy prescribing rates to the non-risk adjusted PMPMs and non-risk adjusted TCRRVs as the only factor that is not accounted for in the Rx prescribing rate metric is the intensity of the drug prescribed. The intensity includes generic usage as well as the variation in cost between drugs.

### Correlations Between ACG Score, Non-Risk Adjusted PMPMs, and Non-Risk Adjusted TCRRVs to Non-Risk Adjusted Utilization Metrics

Since the ACG score, non-risk adjusted PMPMs and non-risk adjusted TCRRVs are a measure of the consumption of health care services, there should be strong correlation between these values and known utilization metrics. These correlations will not be absolute as the utilization metrics encompass only a portion of the total member's experience. It is expected however that the non-risk adjusted TCRRVs, which is the underlying value that measures resource use, should have similar correlations to the non-risk adjusted PMPMs and ACG scores.

**Composite Utilization:** A utilization metric was created by weighting each of the underlying utilization metrics by the place of service percent of resources it represents of the total resources by each provider group.

Composite Utilization Metric by Provider Group =

$$\begin{aligned}
 &\text{Inpatient} \quad (\text{Admit Rate} \times \text{Inpatient Resource Use } \%) + \\
 &\text{Outpatient} \quad (\text{Average (ER rate, OP Surg Rate, High Tech Rad Rate)} \times \text{Outpatient Resource Use } \%) + \\
 &\text{Professional} \quad (\text{Average (E\&M rate, Lab/Path Rate, Std Rad)} \times \text{Professional Resource Use } \%) + \\
 &\text{Pharmacy} \quad (\text{Rx rate} \times \text{Pharmacy Resource Use } \%)
 \end{aligned}$$

Non-Risk Adjusted  Metric	Correlation Coefficient		
	ACG	Non-Risk Adj PMPMs	Non-Risk Adj TCRRVs
Composite Utilization	0.74	0.69	0.87

The non-risk adjusted resource composite is highly correlated with ACGs, non-risk adjusted PMPMs and non-risk adjusted TCRRVs.

## Risk Adjusted Correlations

### Correlations Between the Risk Adjusted Place of Service Metrics and TCI, Price, and RUI

There should be some correlation between places of service and overall TCI, Price, and RUI measures. As health care evolves, provider patient mix varies and delivery of services transition into and cross different settings, the correlations between those settings and the overall measures may differ by provider group.

Appendix B includes percent of business by provider group to highlight the variation across the groups and the places of service that may be contributing more or less to a group's total cost. Because of the continued movement from inpatient to outpatient, the two were combined into hospital-based care, representing higher cost and higher resource intensive care.

- Both overall Price and Total Resource Use are correlated with TCI as expected. However, price is more highly correlated with TCI as there is significantly more variation between providers in price than resource use, therefore it has a larger impact on TCI.
- Hospital-based care and professional TCI are strongly correlated with overall TCI.
- As expected there is little correlation between the Rx TCI and overall TCI as there is less variation in pharmacy when compared to the other places of service once ACG risk adjustment is applied.
- Professional RUI is highly correlated with overall RUI, supporting the notion primary care providers are integral in the management of total costs and resources. Hospital based RUI has a lower correlation than professional as a lower proportion of patients require hospital based care.
- As expected both hospital-based care and professional price are strongly correlated with overall price.

Risk Adjusted Metric	Correlation Coefficient		
	TCI	RUI	Price
Hospital TCI	0.74		
Prof TCI	0.73		
Rx TCI	0.16		
Hospital RUI		0.30	
Prof RUI		0.74	
Total RUI	0.39		
Hospital Price			0.86
Prof Price			0.83
Total Price	0.87		

### Correlations Between Risk Adjusted Place of Service Utilization Metrics and Corresponding TCI and RUI

There should be a correlation between the risk adjusted place of service utilization metrics and the risk adjusted PMPMs and TCRRVs of the corresponding place of service. The magnitude of the correlation is dependent upon the utilization metric's penetration within the place of service and the cost and/or resource intensity of the metric. Since the risk adjustment accounts for variations in illness burden these correlations will be different from their non-risk adjusted results displayed in the [Correlations Overview](#) section. Individual provider group non-risk adjusted results included in [Appendix C](#).

Risk Adjusted	Correlation Coefficient	
Service Category Metric	Service Category TCIs	Service Category RUIs
<b>Inpatient</b>		
Admit Rate	0.78	0.82
<b>Outpatient</b>		
ER Cnt	0.68	0.46
OP Surgery	0.55	0.49
High Tech Rad	0.21	0.37
<b>Professional</b>		
E&M Visits	0.48	0.70
Lab/Path	0.59	0.54
Std Rad	0.48	0.38
<b>Pharmacy</b>		
Rx Count	0.25	

**Inpatient:** There is a high correlation between the risk adjusted admit rate and the inpatient TCI and RUI. This would indicate that the higher the risk adjusted admit rate the more likely a provider will have a higher than average TCI and RUI.

**Outpatient:** There is a moderate correlation between the risk adjusted ER count and the outpatient TCI and RUI. This would indicate that the higher the risk adjusted ER counts the more likely a provider will have a higher than average outpatient TCI and RUI.

High tech radiology having less of a correlation to the outpatient RUI is an indication that these services are not the driving force behind the outpatient RUI performance as they are not as prevalent.

**Professional:** The professional utilization metrics are moderately correlated to the professional TCI and

RUI.

This result is as expected because the professional place of service includes a significant amount of services beyond these three utilization measures (other professional services = 55%).

It is also as expected because having higher than average utilization on diagnostic or management based services does not necessarily indicate a higher resource consuming patient.

**Pharmacy:** The low correlation between Rx count and Rx TCI indicates that after risk adjustment the type and cost of the drug prescribed (e.g., brand vs generic) drives TCI rather than the number of prescriptions.

Composite Utilization: A utilization metric was created by weighting each of the underlying utilization metrics by the place of service percent of resources it represents of the total resources for each provider group.

- Composite Utilization Metric by Provider Group =
- Inpatient (Admit Rate x Inpatient Resource Use %) +
- Outpatient (average (ER rate, OP Surg Rate, High Tech Rad Rate) x Outpatient Resource Use %) +
- Professional (average (E&M rate, Lab/Path Rate, Std Rad) x Professional Resource Use %) +
- Pharmacy (Rx rate x Pharmacy Resource Use %)

Risk Adjusted	Correlation Coefficient	Correlation Coefficient
Metric	TCI	RUI
Composite Utilization	0.72	0.52

The indexed Total Cost of Care and Resource Use measures have high correlations to a risk adjusted composite utilization index, which was developed as a proxy to measure total resource consumption.



## Detailed Provider to Provider Analysis

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The Total Cost of Care and Resource Use measure are designed to identify variations between providers accurately. [Appendix A](#) and [Appendix B](#) compare findings and results by the network of providers for the utilization metrics and the Total Cost of Care and Resource Use measures. The utilization metrics help identify what drivers are contributing to a group's TCI and RUI results. An analysis was then conducted for two specific provider groups in order to better highlight in detail the relationship between the utilization metrics and total cost and resource use.

Since each utilization metric is designed to measure a portion of health care services, a composite utilization measure is necessary to aid in the evaluation of the accuracy and correctness of the Resource Use measure. Since the TCI includes a cost per unit (price) component, the evaluation is more comparable between the RUI and utilization.

### Primary Care Provider Network Results

See [Appendix B](#) for a full list of provider group results.

### High to Low Provider Contrast Analysis

The TCI and RUI should clearly identify providers that are high or low performing compared to the average and are supported by the risk adjusted utilization metrics. Two provider profiles (Provider Group 14 and 56) are analyzed below to highlight the variation in care across provider groups and the impact the variation has on overall TCI, resource use, and the utilization metrics. See [Appendix B](#) for detailed results.

#### Profile of a High Performing Provider – (Low TCI, Price and RUI)

- Provider Group 14 is located in the Twin Cities metro area market of Minnesota which has more competition and more access to lower cost alternative care settings (e.g., after hour and urgent care; outpatient surgery, dialysis and radiology centers) which support lower prices and lower hospital-based care which drives down resource use. Provider Group 14 has a lower than average TCI (0.92) and RUI (0.95) based on the following contributing factors:
  - Lower than average admissions.
  - Lower than average ER visits, high tech radiology, and outpatient surgeries.
  - Lower than average lab/path and standard radiology services.
  - E&M visits are within 5 points of average.
- Provider Group 14 has a patient population with a 13% higher illness burden than average, but is performing better than average on cost and resources. Provider Group 14 is an example of a group that is managing their patient population through professional services and prescription drug therapies using lower cost and resource intensive services.

#### Profile of a Low Performing Provider (High TCI, Price and RUI)

- Provider Group 56 is located within a market of greater Minnesota that has less competition driving higher prices and little access to after-hours care and lower cost alternative care settings leading to more hospital-based care and resources. Provider Group 56 has higher than average TCI (1.26), higher than average price (1.23), and slightly higher than average RUI (1.02) based on the following contributing factors:

- Higher than average admissions.
- Much higher than average ER visits and higher than average outpatient surgeries.
- Higher than average price for inpatient and outpatient services.
- Utilization of less professional services than average at a higher than average price.
- Provider Group 56 has a patient population with a 5% higher illness burden than average and has a TCI 26% higher than average. Provider Group 56 is an example of a group that utilizes more resources in the hospital-based setting. Location and access to services contribute to higher cost and resource intensive services.

Provider Group	Average ACG Score			TCI			Price Index			Resource Use Index		
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Provider 14	1.17	1.15	1.13	0.84	0.88	0.92	0.88	0.93	0.97	0.96	0.95	0.95
Provider 56	1.02	1.03	1.04	1.31	1.29	1.26	1.25	1.23	1.23	1.05	1.05	1.02

Provider Group	E&M Index	Lab/Path Index	Std Rad Index	Rx Index	Admit Index	ER Index	OP Surg Index	High Tech Rad Index	Hospital-based TCI	Prof TCI	Rx TCI	Hospital-based Price	Prof Price	Hospital-based RUI	Prof RUI
Provider 14	1.05	0.97	0.96	0.88	0.88	0.85	0.97	0.94	0.83	0.97	1.09	0.97	0.93	0.85	1.05
Provider 56	0.98	1.02	0.98	1.12	1.07	1.47	1.18	0.82	1.29	1.29	1.11	1.22	1.31	1.06	0.98

## Consistency

The 2013 through 2015 variation in TCI, Price, and Resource Use indices are displayed for the network of providers. Providers' performance across all three measures is relatively consistent across all three years and results are shown in the table below. The factors that drive variation between years within a provider are cost per unit and resource use management. The results show that TCI has the most variation as it combines the changes for both price and resource use. The results also show that there is more variation in resource use over time than price. This indicates that providers are receiving similar price increases, but how providers are managing their patients' resource use is contributing more to the variation seen in costs.

Provider Group Size	TCI				Price				RUI			
	25th Percentile	Average	Median	75th Percentile	25th Percentile	Average	Median	75th Percentile	25th Percentile	Average	Median	75th Percentile
<1,000	0.04	0.07	0.07	0.11	0.02	0.04	0.03	0.05	0.03	0.05	0.05	0.09
1,000-2,000	0.03	0.08	0.07	0.11	0.02	0.03	0.03	0.04	0.03	0.06	0.07	0.09
2,000+	0.01	0.03	0.03	0.04	0.01	0.02	0.01	0.02	0.01	0.03	0.03	0.05

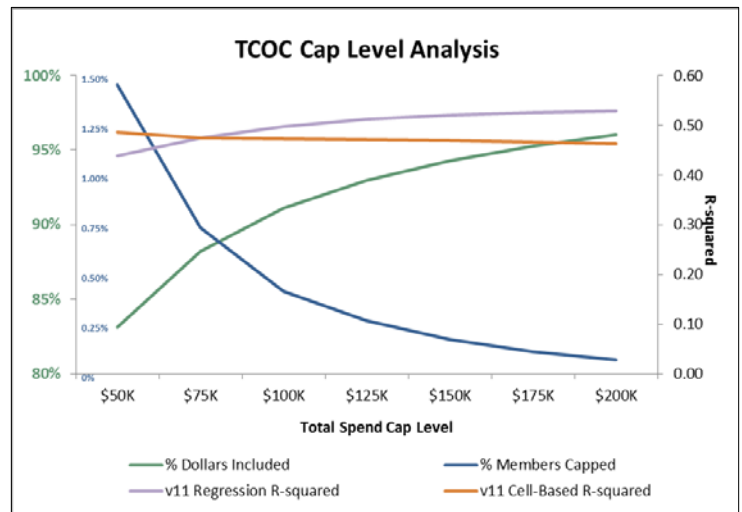
## Truncation and Exclusion Analysis

When the TCOC model was originally endorsed by the National Quality Forum in 2012 the combined medical and pharmacy patient spend was truncated at \$100,000. Given medical inflation has been 2-4% per year, it is necessary to increase the spend truncation level to account for the natural rise in healthcare costs. Since the model needs to remain stable year over year to accommodate trending usability, the truncation level also needs to remain stable, with only periodic updates. Multiple truncation levels were tested; however, a cap level of \$125,000 returned the percent of patients and spend included in the model, and R-squared values closest to the original model (\$100,000).

**Graph 1. TCOC Total Spend Truncation Levels**

When TCOC is truncated at \$100,000, 0.5% of patients are capped, 92% of dollars are included and  $R^2$  is 0.473, whereas when TCOC truncates at \$125,000, the results are back in line with the original model, 0.3% of patients are truncated, 94% of dollars are included and  $R^2$  is 0.472.

There is minimal change in relative TCIs for provider groups when the truncation level is increased to \$125,000. However, because the provider groups with higher cost positions have greater potential for capped patients, they experience an increase in TCI as they were benefiting from the lower truncation levels.



The truncation level for Resource Use when used in conjunction with TCOC is variable by member as the Total Care Relative Resource Use Values (TCRRVs) are truncated in the same proportion as the total paid amount. The practical effect is the price (i.e., total paid amount/TCRRV) for the services for the truncated members remains constant as the total paid is reduced using the same factor as the TCRRVs.

When the Resource Use measure is deployed independently of the TCOC measure the same truncation level as TCOC can be applied as the TCRRVs are calibrated to reflect a standardized total paid.

Exclusions beyond truncating the total paid amount and resource use are applied to the TCOC and Resource Use measures to ensure the results are reliable and valid. The following tables describe the exclusions that are applied to the measures:

TCOC Measure Population Exclusion Funnel	Percent of Members	Percent of Total Paid
All Commercial Members	100%	100%
Members over 1	99%	98%
Members between 1-64	96%	92%
Members age 1-64 and enrolled 9 months	78.3%	85%
Truncated at \$125,000*	0.30%	78.7%
Member and Spend included	78.3%	78.7%

\* Members are not removed from the measures

Resource Use Measure Population Exclusion Funnel	Percent of Members	Percent of Total Paid
All Commercial Members	100%	100%
Members over 1	99%	98%
Members between 1-64	96%	91%
Members age 1-64 and enrolled 9 months	78.3%	84%
Truncated at 125,000*	0.28%	79.2%
Member and Spend included	78.3%	79.2%

\* Members are not removed from the measures

## Definitions

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### Service Category

- Inpatient: Claims on a 1450 claims form and one of the following criteria
  - Room and Board Revenue codes: 100-189, 200-219, 650, 655, 1000-1005
  - Bill Type code: 21, 28, 66, 86
  - Bill Type code of 11 and a revenue code of 190
- Outpatient all other 1450 claim forms
- Professional all 1500 claim forms
- Rx – All pharmacy data

## Total Cost of Care Validity Metric Overview

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### Utilization Metrics

Admits	An inpatient admission.
ER Count	An outpatient claim that includes at least one revenue code between 450- 459.
E&M Count	Evaluation & Management CPT codes from a professional claim.
Lab\Path	All Laboratory and Pathology CPT codes.
Standard Radiology	All radiology CPT codes that are not considered high technology radiology (MRI, CT, nuclear medicine, PET).
Outpatient Surgery	All outpatient visits that include one surgical CPT.
High Technology Rad	CPT codes from the professional or outpatient place of service that are considered an MRI, CT, nuclear medicine or PET scan. Only one bill is counted if two are submitted for one patient.
Rx Count	Script count.
Percent Generic	The percent of prescription that are generic.

### Other Metrics

Non-risk adjusted PMPM	The non-risk adjusted spend divided by the member months of the population. These are non-risk adjusted numbers.
ACG Score	At any given level it is the sum of a (member's assigned ACG cell weight x their member months divided by the total member months) of the given level (aka Average ACG weight at any given level).
TCRRV	Total Care Relative Resource Value – is a price neutral value that is relative within and across all places of service and types of treatment. In essence it is a standard fee schedule of all services within the health care continuum.
TCRRV PMPM	The non-risk adjusted TCRRVs divided by the member months of the population. These are non-risk adjusted numbers.
TCI	Total Cost Index – the ACG risk adjusted spend PMPM divided by the analysis population's ACG adjusted spend PMPM.
RUI	Resource Use Index – the ACG risk adjusted TCRRV PMPM divided by the analysis population's ACG adjusted TCRRV PMPM.
Price	Price Index – total spend divided by the resources compared to the analysis population's total spend divided by the analysis population's resources.
	$\text{Total Cost of Care} = \text{Price} \times \text{Resource Use}$



## Appendix A: Total Cost of Care and Resource Use Report 2014-2015

Provider Group	Average ACG Score			TCI			Price Index			Resource Use Index		
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Provider 01	1.11	1.09	1.09	0.87	0.84	0.84	0.89	0.91	0.89	0.98	0.93	0.93
Provider 02	~	1.18	1.04	~	0.88	0.84	~	0.90	0.88	~	0.98	0.96
Provider 03	0.85	0.86	0.88	0.93	0.86	0.85	0.95	0.94	0.93	0.98	0.91	0.92
Provider 04	0.86	0.91	0.89	0.82	0.88	0.87	0.89	0.89	0.90	0.92	0.98	0.97
Provider 05	1.27	1.15	1.12	0.93	0.86	0.87	1.14	1.11	1.06	0.81	0.78	0.82
Provider 06	1.04	1.04	1.01	0.82	0.90	0.88	0.88	0.89	0.92	0.93	1.01	0.96
Provider 07	1.08	1.08	1.05	0.92	0.92	0.89	0.95	0.92	0.92	0.98	1.00	0.97
Provider 08	1.03	0.99	1.03	0.93	0.96	0.90	0.91	0.94	0.96	1.03	1.02	0.94
Provider 09	1.00	1.04	1.06	0.86	0.86	0.90	0.88	0.89	0.91	0.98	0.97	1.00
Provider 10	1.16	1.17	1.19	0.80	0.87	0.90	0.86	0.91	0.92	0.93	0.96	0.98
Provider 11	1.19	1.35	1.42	1.02	0.93	0.91	1.01	0.96	0.91	1.00	0.97	1.00
Provider 12	1.07	1.05	1.06	0.90	0.91	0.91	0.92	0.92	0.93	0.98	0.98	0.98
Provider 13	1.01	1.06	1.06	0.95	0.95	0.92	0.91	0.93	0.93	1.05	1.02	0.99
Provider 14	1.17	1.15	1.13	0.84	0.88	0.92	0.88	0.93	0.97	0.96	0.95	0.95
Provider 15	0.91	0.94	0.95	0.84	0.97	0.92	0.94	0.98	1.00	0.89	0.99	0.92
Provider 16	1.17	1.09	1.09	0.91	0.94	0.93	0.90	0.90	0.90	1.01	1.04	1.03
Provider 17	1.14	1.14	1.14	0.89	0.85	0.93	0.89	0.87	0.95	1.00	0.98	0.97
Provider 18	0.98	1.05	0.99	1.01	0.98	0.94	1.03	1.04	1.06	0.98	0.94	0.89
Provider 19	0.90	0.88	0.86	0.95	0.92	0.94	0.94	0.93	0.94	1.01	0.98	1.01
Provider 20	0.99	1.02	1.04	1.00	0.96	0.96	0.97	0.97	0.98	1.03	0.99	0.98
Provider 21	0.82	0.84	0.85	0.98	1.00	0.96	0.95	0.94	0.95	1.04	1.07	1.01
Provider 22	1.04	0.93	0.94	1.07	1.03	0.96	1.10	1.15	1.11	0.97	0.90	0.87
Provider 23	0.88	0.96	0.94	1.09	0.98	0.96	0.96	0.97	0.95	1.14	1.01	1.01
Provider 24	0.91	0.94	0.94	0.96	0.96	0.97	0.93	0.94	0.94	1.02	1.02	1.03
Provider 25	1.20	1.12	1.20	0.94	0.84	0.97	0.94	0.93	0.99	1.00	0.90	0.99
Provider 26	1.07	1.07	1.07	0.95	0.96	0.98	0.97	0.97	0.98	0.98	0.99	1.00
Provider 27	1.06	1.04	1.03	1.02	0.96	0.98	0.91	0.88	0.87	1.12	1.09	1.12
Provider 28	1.02	1.03	1.04	0.96	0.97	0.98	0.93	0.93	0.94	1.03	1.04	1.05
Provider 29	0.96	1.02	1.03	1.12	1.07	1.01	1.10	1.08	1.08	1.02	0.99	0.94
Provider 30	0.89	0.93	0.90	1.03	0.99	1.01	0.97	0.98	0.99	1.07	1.01	1.02
Provider 31	1.01	0.98	0.98	1.03	1.01	1.01	1.06	1.10	1.12	0.97	0.91	0.91
Provider 32	1.00	0.96	1.06	1.04	0.97	1.02	0.95	0.94	0.98	1.09	1.03	1.04
Provider 33	~	0.95	1.11	~	1.00	1.02	~	0.88	0.89	~	1.14	1.15

The red line divides providers between above and below the average total cost index (1.00).

*Continued on next page*



**Appendix A: Total Cost of Care and Resource Use Report 2014-2015 - *continued***

Provider Group	Average ACG Score			TCI			Price Index			Resource Use Index		
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Provider 34	1.10	1.11	1.10	1.00	1.02	1.03	1.00	1.00	1.01	1.00	1.02	1.02
Provider 35	0.94	0.96	0.99	1.03	1.04	1.03	1.03	1.03	1.07	1.00	1.01	0.96
Provider 36	1.11	1.12	1.10	1.03	1.05	1.04	0.90	0.90	0.91	1.15	1.16	1.14
Provider 37	1.09	1.13	1.08	1.03	1.06	1.04	0.92	0.91	0.88	1.12	1.16	1.18
Provider 38	0.94	1.00	0.99	1.15	1.06	1.05	1.05	1.08	1.09	1.09	0.98	0.96
Provider 39	1.07	1.09	1.02	1.05	1.08	1.07	1.17	1.22	1.18	0.90	0.88	0.90
Provider 40	0.54	0.51	0.51	0.95	0.99	1.07	0.94	0.94	0.95	1.01	1.05	1.12
Provider 41	0.50	0.53	0.52	1.01	1.04	1.07	0.95	0.96	0.95	1.06	1.07	1.13
Provider 42	0.82	0.90	0.97	1.09	1.09	1.07	1.11	1.10	1.12	0.98	0.99	0.96
Provider 43	~	~	1.07	~	~	1.08	~	~	1.18	~	~	0.91
Provider 44	1.12	1.06	1.09	1.13	1.09	1.10	1.12	1.09	1.08	1.01	0.99	1.02
Provider 45	0.88	0.88	0.90	1.25	1.20	1.11	1.25	1.28	1.25	0.99	0.93	0.88
Provider 46	0.92	0.90	0.87	1.10	1.15	1.11	1.16	1.21	1.22	0.95	0.95	0.91
Provider 47	~	1.07	0.92	~	1.30	1.11	~	1.18	1.23	~	1.10	0.90
Provider 48	0.91	0.86	0.86	1.07	1.11	1.12	1.10	1.12	1.10	0.97	0.99	1.02
Provider 49	1.15	1.01	1.05	1.09	1.12	1.17	1.13	1.14	1.23	0.96	0.99	0.95
Provider 50	~	~	0.97	~	~	1.18	~	~	1.09	~	~	1.08
Provider 51	0.83	0.79	0.84	0.95	1.00	1.19	1.10	1.10	1.13	0.86	0.91	1.05
Provider 52	0.98	1.09	0.99	1.36	1.31	1.19	1.36	1.32	1.34	1.00	0.99	0.89
Provider 53	0.85	0.92	0.90	1.20	1.26	1.20	1.23	1.23	1.25	0.98	1.03	0.96
Provider 54	0.89	0.97	0.96	1.36	1.23	1.20	1.28	1.31	1.30	1.06	0.94	0.92
Provider 55	1.13	0.92	0.90	1.19	1.38	1.25	1.32	1.36	1.27	0.90	1.02	0.98
Provider 56	1.02	1.03	1.04	1.31	1.29	1.26	1.25	1.23	1.23	1.05	1.05	1.02
Provider 57	~	~	0.86	~	~	1.26	~	~	1.34	~	~	0.94
Provider 58	0.92	1.00	0.93	1.19	1.10	1.27	1.11	1.07	1.13	1.07	1.02	1.12
Provider 59	0.83	0.83	0.80	1.21	1.26	1.29	1.17	1.14	1.23	1.04	1.11	1.05
Provider 60	0.98	0.98	1.00	1.37	1.39	1.36	1.49	1.47	1.47	0.92	0.94	0.93
Provider 61	0.95	0.88	0.85	1.17	1.26	1.36	1.25	1.24	1.28	0.93	1.02	1.06
Provider 62	0.87	0.86	0.86	1.37	1.32	1.42	1.49	1.53	1.50	0.92	0.86	0.95
Provider 63	0.87	0.84	0.96	1.42	1.45	1.47	1.53	1.49	1.52	0.93	0.98	0.97
Provider 64	1.04	1.00	0.97	1.39	1.60	1.54	1.61	1.59	1.63	0.87	1.01	0.95
Provider 65	1.01	1.01	0.97	1.48	1.60	1.67	1.61	1.65	1.59	0.92	0.97	1.05
Provider 66	1.60	1.58	1.56	1.80	1.96	2.03	1.45	1.48	1.46	1.24	1.32	1.39
<b>Network Total</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>



## Appendix B: Primary Care Provider Network Overview and Utilization Metrics 2015 – Risk Adjusted Measures

Provider Group	Risk Adjusted Measures									Risk Adjusted Place of Service Metrics						% of Business				
	E&M Index	Lab/Path Index	Std Rad Index	Rx Index	Admit Index	ER Index	OP Surg Index	High Tech Rad Index	Composite Utilization	Hospital-based TCI	Prof TCI	Rx TCI	Hospital-based Price	Prof Price	Hospital-based RUI	Prof RUI	IP % of Resources	OP % of Resources	Prof % of resources	Rx % of Resources
Provider 01	0.93	1.00	1.05	0.99	0.97	0.88	0.92	0.93	0.97	0.76	0.87	0.90	0.87	0.90	0.88	0.97	16%	20%	48%	17%
Provider 02	0.94	1.17	1.11	0.98	0.99	0.77	0.92	0.69	0.99	0.77	0.81	1.03	0.91	0.81	0.84	1.00	17%	18%	51%	14%
Provider 03	0.98	0.89	0.90	0.90	0.97	1.07	1.09	0.96	0.95	0.93	0.82	0.74	1.02	0.84	0.92	0.97	16%	21%	49%	14%
Provider 04	0.95	0.97	1.00	0.93	0.93	0.70	1.02	1.01	0.95	0.84	0.87	0.88	0.88	0.88	0.96	1.00	14%	22%	48%	16%
Provider 05	0.85	0.50	0.86	0.92	0.90	1.30	1.08	1.05	0.92	1.19	0.68	0.64	1.10	1.02	1.08	0.67	20%	30%	36%	14%
Provider 06	0.96	0.94	0.80	1.03	0.92	0.97	0.68	0.95	0.92	0.89	0.86	1.01	0.91	0.90	0.98	0.96	17%	20%	44%	19%
Provider 07	1.09	1.02	0.87	1.02	0.74	0.71	1.09	1.15	0.97	0.71	1.01	1.06	0.88	0.93	0.81	1.09	10%	19%	50%	21%
Provider 08	1.09	1.13	0.96	0.97	1.12	0.70	0.82	1.12	1.03	0.86	0.94	0.91	1.01	0.91	0.85	1.03	17%	16%	50%	17%
Provider 09	1.00	0.94	1.12	0.94	0.98	0.98	1.08	1.05	1.01	0.95	0.89	0.89	0.88	0.91	1.08	0.97	16%	25%	44%	15%
Provider 10	0.99	0.94	0.86	0.97	1.03	1.00	0.96	1.02	0.97	0.93	0.91	0.88	0.90	0.92	1.02	0.99	20%	20%	45%	16%
Provider 11	0.99	1.33	0.78	0.88	0.88	1.34	0.86	0.72	0.96	1.22	0.58	1.05	0.93	0.79	1.29	0.74	17%	37%	31%	15%
Provider 12	0.99	1.08	1.01	0.98	0.95	0.92	0.88	0.91	0.98	0.78	1.00	1.00	0.82	1.00	0.95	1.00	16%	21%	46%	17%
Provider 13	1.03	0.94	0.83	0.91	1.12	1.07	1.12	1.04	0.99	0.99	0.90	0.88	0.93	0.90	1.05	1.00	20%	21%	45%	15%
Provider 14	1.05	0.97	0.96	0.88	0.88	0.85	0.97	0.94	0.94	0.83	0.97	1.09	0.97	0.93	0.85	1.05	15%	18%	48%	19%
Provider 15	0.97	0.97	1.19	0.98	0.94	1.19	1.30	1.03	1.05	1.09	0.78	0.96	1.07	0.91	1.02	0.86	16%	25%	42%	16%
Provider 16	1.04	0.86	0.84	1.03	0.91	0.72	1.02	1.06	0.94	0.80	0.95	1.20	0.87	0.90	0.91	1.06	14%	19%	46%	21%
Provider 17	0.97	0.98	0.88	0.99	1.08	1.06	0.90	1.00	0.98	0.95	0.93	0.96	0.93	0.96	1.01	0.97	17%	22%	43%	18%
Provider 18	0.95	0.95	1.04	1.06	0.84	1.16	1.13	0.79	0.99	1.23	0.72	0.91	1.32	0.83	0.92	0.86	14%	24%	44%	18%
Provider 19	0.98	0.81	0.91	0.97	0.99	1.27	1.09	1.14	0.99	0.91	0.99	0.83	0.85	1.00	1.07	0.98	17%	23%	47%	13%
Provider 20	0.99	1.05	1.05	0.99	0.94	0.87	0.92	0.99	0.99	0.80	1.07	1.03	0.91	1.02	0.88	1.05	16%	18%	49%	18%
Provider 21	0.98	0.86	0.94	0.91	1.07	1.06	1.17	1.21	0.99	0.99	0.94	0.94	0.94	0.94	1.06	1.00	15%	23%	46%	16%
Provider 22	0.89	0.84	0.85	0.90	1.08	1.11	0.94	0.87	0.94	1.30	0.75	0.75	1.24	0.99	1.05	0.76	18%	26%	40%	16%
Provider 23	0.98	0.96	0.94	1.01	1.07	1.29	1.27	1.46	1.08	1.14	0.78	1.07	0.99	0.87	1.15	0.89	19%	24%	40%	17%
Provider 24	0.96	1.02	1.06	1.02	1.07	0.95	1.16	1.14	1.04	1.06	0.88	0.97	0.92	0.94	1.15	0.93	17%	25%	42%	15%
Provider 25	1.06	1.00	0.76	0.99	1.12	1.24	0.95	0.77	1.00	1.10	0.91	0.97	1.00	0.97	1.09	0.94	19%	24%	40%	17%
Provider 26	0.98	0.97	0.93	0.98	1.01	1.15	0.97	0.98	0.99	1.01	0.94	1.03	0.98	0.97	1.03	0.97	16%	23%	43%	17%
Provider 27	1.02	0.97	0.97	0.89	0.99	0.62	1.11	0.92	0.96	0.88	0.98	0.99	0.86	0.85	0.96	1.15	24%	14%	52%	9%
Provider 28	1.03	0.95	0.91	1.00	1.01	0.92	0.99	1.08	0.99	0.94	0.99	1.07	0.91	0.96	1.04	1.04	16%	22%	45%	17%
Provider 29	0.94	0.96	0.83	0.97	1.00	1.14	1.11	1.05	0.98	1.33	0.78	0.94	1.26	0.90	1.06	0.86	15%	27%	41%	17%
Provider 30	0.97	0.92	1.13	1.06	1.19	1.18	1.36	1.24	1.11	1.17	0.83	1.20	0.97	1.00	1.21	0.83	18%	25%	37%	20%
Provider 31	0.97	0.85	0.97	1.00	1.07	1.13	1.09	0.96	1.00	1.48	0.67	0.87	1.43	0.81	1.04	0.82	19%	24%	41%	16%
Provider 32	1.10	0.97	0.95	1.04	0.88	0.82	0.94	1.04	0.98	1.07	1.02	1.05	1.04	0.92	1.02	1.10	15%	22%	46%	18%
Provider 33	1.09	1.23	1.00	1.06	0.67	0.80	1.01	1.22	1.04	0.77	1.09	1.40	0.93	0.85	0.83	1.28	9%	17%	50%	24%

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**Appendix B: Primary Care Provider Network Overview and Utilization Metrics 2015 – Risk Adjusted Measures - *continued***

Provider Group	Risk Adjusted Measures									Risk Adjusted Place of Service Metrics							% of Business			
	E&M Index	Lab/Path Index	Std Rad Index	Rx Index	Admit Index	ER Index	OP Surg Index	High Tech Rad Index	Composite Utilization	Hospital-based TCI	Prof TCI	Rx TCI	Hospital-based Price	Prof Price	Hospital-based RUI	Prof RUI	IP % of Resources	OP % of Resources	Prof % of resources	Rx % of Resources
Provider 34	1.03	0.97	1.01	1.03	1.04	0.96	0.98	1.04	1.01	1.00	1.05	1.05	1.02	1.01	0.97	1.04	17%	20%	46%	18%
Provider 35	0.96	0.89	1.02	1.13	1.05	1.20	1.19	0.96	1.04	1.38	0.73	0.90	1.36	0.81	1.01	0.90	18%	23%	44%	16%
Provider 36	1.09	0.93	1.15	0.86	1.00	0.89	1.31	0.92	1.02	0.93	1.04	0.99	0.89	0.90	0.98	1.16	23%	15%	52%	9%
Provider 37	1.06	1.21	1.40	0.91	0.96	0.78	1.25	0.84	1.10	0.87	1.10	1.03	0.88	0.87	0.94	1.27	19%	16%	55%	10%
Provider 38	0.99	0.91	0.97	0.98	1.05	1.21	1.01	0.93	1.00	1.45	0.87	0.65	1.19	1.02	1.22	0.85	23%	25%	39%	13%
Provider 39	0.91	0.88	1.03	0.93	0.84	1.09	1.09	0.94	0.94	1.44	0.83	0.67	1.53	0.91	0.95	0.91	16%	24%	47%	13%
Provider 40	1.02	1.19	1.12	1.02	0.79	0.81	0.92	1.27	1.05	0.90	1.00	1.14	1.08	0.86	0.92	1.16	7%	20%	59%	14%
Provider 41	1.07	1.00	0.92	1.01	0.95	0.81	0.95	0.98	0.98	0.96	0.98	1.12	1.09	0.85	0.97	1.16	10%	19%	57%	13%
Provider 42	0.98	0.80	0.94	1.01	1.12	1.20	1.25	1.24	1.05	1.49	0.83	0.81	1.20	1.00	1.25	0.83	20%	28%	38%	15%
Provider 43	0.90	0.89	0.92	1.00	1.24	1.60	1.21	0.94	1.09	1.82	0.61	0.66	1.44	0.86	1.26	0.71	26%	26%	35%	14%
Provider 44	0.94	0.98	0.90	0.99	1.03	1.20	1.18	1.06	1.02	1.52	0.84	0.87	1.20	0.94	1.26	0.90	19%	27%	39%	15%
Provider 45	0.96	0.91	0.97	1.04	0.91	1.41	1.15	0.96	1.02	1.54	0.88	0.95	1.60	1.02	0.96	0.86	11%	27%	43%	19%
Provider 46	0.91	0.91	0.92	1.01	1.00	1.00	1.11	1.02	0.97	1.26	1.09	0.86	1.32	1.21	0.97	0.90	15%	23%	46%	16%
Provider 47	0.93	0.81	0.96	1.14	1.11	1.60	1.25	1.06	1.08	1.46	0.82	1.10	1.48	1.08	0.99	0.76	17%	23%	38%	22%
Provider 48	1.01	0.83	1.02	0.95	1.07	1.04	1.11	1.12	1.00	1.35	0.98	1.06	1.18	1.04	1.15	0.94	17%	24%	42%	18%
Provider 49	1.01	1.11	1.05	1.03	1.22	1.45	1.31	1.44	1.19	1.79	0.78	0.83	1.39	1.05	1.29	0.75	18%	32%	34%	15%
Provider 50	1.00	1.01	1.05	0.98	1.23	1.27	1.25	1.21	1.13	1.89	0.70	0.96	1.24	0.85	1.53	0.83	18%	34%	34%	14%
Provider 51	1.03	0.93	0.98	0.88	1.22	1.06	1.14	1.09	1.04	1.58	0.94	0.84	1.31	0.98	1.20	0.97	19%	24%	44%	12%
Provider 52	0.93	0.92	0.94	1.07	1.08	1.01	0.95	0.87	0.98	1.69	0.92	0.70	1.50	1.20	1.13	0.77	16%	32%	38%	14%
Provider 53	1.04	0.94	1.08	1.07	0.80	1.04	1.27	0.99	1.02	1.05	1.33	1.11	1.27	1.31	0.83	1.01	13%	19%	49%	19%
Provider 54	0.97	0.91	0.98	1.09	0.99	1.32	1.16	0.96	1.03	1.65	0.91	0.90	1.59	1.09	1.03	0.83	17%	26%	41%	16%
Provider 55	0.94	0.95	1.06	1.06	1.03	1.40	1.24	1.07	1.08	2.03	0.74	0.79	1.61	0.93	1.26	0.79	15%	33%	38%	14%
Provider 56	0.98	1.02	0.98	1.12	1.07	1.47	1.18	0.82	1.07	1.29	1.29	1.11	1.22	1.31	1.06	0.98	16%	22%	43%	18%
Provider 57	1.02	0.84	1.11	1.10	1.07	1.90	1.48	1.14	1.18	2.18	0.66	0.95	1.75	0.91	1.25	0.72	17%	30%	35%	18%
Provider 58	0.91	0.79	0.87	0.99	1.42	1.20	1.03	1.01	1.04	2.08	0.82	0.79	1.45	0.79	1.43	1.04	20%	26%	42%	13%
Provider 59	1.02	0.93	1.03	1.23	1.17	2.04	1.35	1.22	1.22	1.83	0.93	1.10	1.37	1.13	1.34	0.82	16%	29%	37%	18%
Provider 60	0.99	0.97	1.05	1.01	1.03	1.39	1.04	0.97	1.04	1.42	1.54	0.87	1.38	1.67	1.02	0.92	18%	23%	44%	16%
Provider 61	1.03	0.93	1.14	1.11	1.45	1.46	1.24	1.05	1.18	1.56	1.32	1.08	1.25	1.40	1.25	0.94	21%	20%	41%	18%
Provider 62	0.96	0.93	1.00	1.18	1.35	1.66	1.26	0.87	1.17	2.23	1.02	0.87	1.65	1.44	1.36	0.71	23%	27%	34%	16%
Provider 63	1.01	0.99	1.07	1.07	1.04	1.58	1.01	0.86	1.06	1.48	1.73	1.03	1.38	1.79	1.06	0.96	22%	18%	43%	16%
Provider 64	0.96	0.98	1.08	0.99	1.11	1.41	0.69	0.96	1.03	1.40	1.92	0.85	1.43	1.92	0.97	1.00	20%	18%	47%	14%
Provider 65	1.00	1.08	0.84	1.09	0.99	0.98	1.19	0.96	1.02	2.30	1.42	0.92	1.67	1.70	1.39	0.84	14%	34%	36%	16%
Provider 66	1.20	2.29	1.55	1.01	1.46	1.28	1.44	2.07	1.52	2.00	2.47	1.40	1.30	1.77	1.53	1.40	16%	28%	41%	15%
<b>Network Total</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>16%</b>	<b>21%</b>	<b>46%</b>	<b>17%</b>



## Appendix C: Primary Care Provider Network Overview and Utilization Metrics 2015 – Non-Risk Adjusted Measures

Provider Group	Non-Risk Adjusted Measures									% of Business			
	E&M/ 1000	Lab/Path/ 1000	Std Rad/ 1000	Rx/ 1000	Admit/ 1000	ER/ 1000	OP Surg/ 1000	High Tech Rad/ 1000	Non-Risk Adj Composite Utilization	IP % of Resources	OP % of Resources	Prof % of resources	Rx % of Resources
Provider 01	4,182	8,536	1,240	15,521	57	153	155	192	1.05	16%	20%	48%	17%
Provider 02	4,248	10,714	1,459	12,332	83	145	127	111	1.14	17%	18%	51%	14%
Provider 03	3,908	6,172	839	11,327	43	161	133	148	0.83	16%	21%	49%	14%
Provider 04	3,870	6,981	962	12,435	42	111	132	159	0.86	14%	22%	48%	16%
Provider 05	3,815	4,268	1,025	14,697	52	221	189	226	1.01	20%	30%	36%	14%
Provider 06	3,919	7,520	882	16,977	41	140	108	183	0.92	17%	20%	44%	19%
Provider 07	4,525	8,470	946	18,166	29	102	194	246	1.03	10%	19%	50%	21%
Provider 08	4,644	9,175	1,076	15,176	56	111	130	220	1.04	17%	16%	50%	17%
Provider 09	4,300	7,594	1,298	13,985	54	154	171	203	1.04	16%	25%	44%	15%
Provider 10	4,411	8,665	1,147	17,238	71	161	174	221	1.14	20%	20%	45%	16%
Provider 11	5,024	13,228	971	13,903	88	289	152	168	1.27	17%	37%	31%	15%
Provider 12	4,290	8,989	1,166	14,826	54	149	137	174	1.02	16%	21%	46%	17%
Provider 13	4,118	7,976	1,027	14,362	73	153	174	196	1.06	20%	21%	45%	15%
Provider 14	4,501	8,500	1,185	15,973	41	126	179	209	1.03	15%	18%	48%	19%
Provider 15	3,915	7,173	1,255	12,806	52	180	176	170	0.99	16%	25%	42%	16%
Provider 16	4,426	7,279	975	17,929	46	109	178	220	1.01	14%	19%	46%	21%
Provider 17	4,246	8,466	1,033	17,304	56	167	160	221	1.07	17%	22%	43%	18%
Provider 18	3,950	7,390	1,167	15,634	44	176	166	142	0.98	14%	24%	44%	18%
Provider 19	3,808	5,722	909	11,564	55	186	132	165	0.89	17%	23%	47%	13%
Provider 20	4,283	8,803	1,255	15,114	55	141	142	186	1.05	16%	18%	49%	18%
Provider 21	3,871	5,944	913	11,848	44	156	147	182	0.86	15%	23%	46%	16%
Provider 22	3,581	6,205	873	12,504	46	162	136	154	0.86	18%	26%	40%	16%
Provider 23	3,910	6,970	921	12,887	53	197	172	244	0.99	19%	24%	40%	17%
Provider 24	3,928	7,647	1,141	12,882	65	150	150	177	1.00	17%	25%	42%	15%
Provider 25	4,703	8,942	932	17,563	79	207	163	164	1.16	19%	24%	40%	17%
Provider 26	4,285	7,967	1,043	15,086	57	189	149	189	1.03	16%	23%	43%	17%
Provider 27	3,602	10,426	1,948	11,269	172	76	113	106	1.59	24%	14%	52%	9%
Provider 28	4,497	7,644	996	14,821	62	151	148	197	1.02	16%	22%	45%	17%
Provider 29	4,017	7,500	871	14,056	54	182	165	193	0.98	15%	27%	41%	17%
Provider 30	3,817	6,651	1,145	13,835	54	170	182	201	1.00	18%	25%	37%	20%
Provider 31	3,974	6,663	1,056	14,240	61	180	152	162	0.99	19%	24%	41%	16%
Provider 32	4,567	7,883	1,040	17,520	40	120	155	211	1.00	15%	22%	46%	18%
Provider 33	4,760	11,121	1,469	20,441	27	118	189	275	1.23	9%	17%	50%	24%

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**Appendix C: Primary Care Provider Network Overview and Utilization Metrics 2015 – Non-Risk Adjusted Measures - *continued***

Provider Group	Non-Risk Adjusted Measures									% of Business			
	E&M/ 1000	Lab/Path/ 1000	Std Rad/ 1000	Rx/ 1000	Admit/ 1000	ER/ 1000	OP Surg/ 1000	High Tech Rad/ 1000	Non-Risk Adj Composite Utilization	IP % of Resources	OP % of Resources	Prof % of resources	Rx % of Resources
Provider 34	4,534	8,318	1,220	16,929	62	157	161	209	1.10	17%	20%	46%	18%
Provider 35	4,102	7,031	1,132	15,558	68	200	163	162	1.05	18%	23%	44%	16%
Provider 36	4,180	10,777	2,386	11,524	175	129	151	117	1.71	23%	15%	52%	9%
Provider 37	4,154	13,791	2,825	12,672	151	113	147	113	1.70	19%	16%	55%	10%
Provider 38	4,062	6,980	1,041	13,978	57	186	143	162	0.98	23%	25%	39%	13%
Provider 39	4,064	7,014	1,184	13,733	49	196	164	174	0.99	16%	24%	47%	13%
Provider 40	4,092	4,197	511	4,893	16	139	48	65	0.56	7%	20%	59%	14%
Provider 41	4,292	3,463	406	4,649	20	137	49	49	0.52	10%	19%	57%	13%
Provider 42	3,989	6,030	954	14,038	59	185	177	213	1.01	20%	28%	38%	15%
Provider 43	3,810	7,489	1,142	16,075	72	241	199	185	1.16	26%	26%	35%	14%
Provider 44	4,085	8,248	1,083	15,859	60	190	194	212	1.09	19%	27%	39%	15%
Provider 45	3,570	6,443	995	15,138	36	181	151	153	0.91	11%	27%	43%	19%
Provider 46	3,594	6,393	874	12,794	47	150	141	154	0.86	15%	23%	46%	16%
Provider 47	3,645	5,900	1,020	15,964	53	226	169	171	1.00	17%	23%	38%	22%
Provider 48	3,758	5,715	991	12,009	47	140	138	168	0.86	17%	24%	42%	18%
Provider 49	4,281	8,838	1,171	14,818	63	233	200	276	1.20	18%	32%	34%	15%
Provider 50	3,916	7,507	1,118	13,203	65	179	178	201	1.06	18%	34%	34%	14%
Provider 51	4,104	6,252	920	10,188	70	161	128	146	0.93	19%	24%	44%	12%
Provider 52	4,040	7,012	876	14,106	60	181	131	150	0.95	16%	32%	38%	14%
Provider 53	4,219	6,929	1,067	14,137	43	165	153	148	0.94	13%	19%	49%	19%
Provider 54	4,064	6,995	992	14,123	59	226	156	159	1.00	17%	26%	41%	16%
Provider 55	3,875	7,055	1,144	13,089	54	213	162	165	1.01	15%	33%	38%	14%
Provider 56	4,137	8,281	1,152	17,180	61	228	181	152	1.10	16%	22%	43%	18%
Provider 57	3,730	6,010	1,221	15,800	43	230	201	176	1.03	17%	30%	35%	18%
Provider 58	3,575	5,761	914	14,385	63	166	145	166	0.94	20%	26%	42%	13%
Provider 59	3,754	6,239	890	14,952	51	291	149	168	1.01	16%	29%	37%	18%
Provider 60	4,067	7,469	1,115	14,733	57	213	151	171	1.02	18%	23%	44%	16%
Provider 61	3,889	6,561	1,165	15,824	63	192	162	160	1.03	21%	20%	41%	18%
Provider 62	3,605	6,589	1,006	16,622	62	220	158	125	1.02	23%	27%	34%	16%
Provider 63	3,952	7,396	1,130	14,170	61	223	130	136	1.01	22%	18%	43%	16%
Provider 64	3,949	7,393	1,118	12,879	66	229	93	162	1.00	20%	18%	47%	14%
Provider 65	4,019	8,298	912	16,268	52	147	176	167	1.00	14%	34%	36%	16%
Provider 66	6,264	24,993	2,074	19,936	129	257	331	604	2.15	16%	28%	41%	15%
<b>Network Total</b>	<b>4,241</b>	<b>7,863</b>	<b>1,106</b>	<b>14,314</b>	<b>56</b>	<b>160</b>	<b>145</b>	<b>176</b>	<b>1.00</b>	<b>16%</b>	<b>21%</b>	<b>46%</b>	<b>17%</b>