

TCOC Analytic Package – Total Cost of Care and Resource Use SAS User Instructions

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Overview

This document contains important instructions to produce the Total Cost of Care and Resource Use (TCOC) Analytic Package. The TCOC Analytic Package applies Total Care Relative Resource Values (TCRRVs™) to health care claims, assigns members to analysis groups (optional), applies risk adjustment to the data, calculates TCOC and utilization metrics, and creates utilization and service category benchmarks. Utilization metrics include patient management and high cost measures.

- Patient management: E&M for primary care and specialty, lab/pathology, standard radiology, and pharmacy.
- High cost: Admits, inpatient surgery, emergency room, outpatient surgery, high-tech radiology in ER, and high-tech radiology not in ER.

This analytic package also creates an executive summary of the above reported metrics. The package will produce non-risk adjusted TCOC measures by service categories as well as reported metrics for total medical and pharmacy member months and allowed amounts.

Module Descriptions

The **Total Care Relative Resource Values (TCRRVs™)** are a comprehensive set of relative values designed to evaluate resource use across all types of medical services, procedures, and places of service. The values are independent of price and can be used to evaluate the resource consumption of providers, hospitals, physicians, and health plans against their peers in treating risk adjusted populations/conditions. TCRRVs™ are commonly used to support affordability initiatives, to identify instances of overuse/efficiency, and to measure price variations.

Each TCOC grouper version includes TCRRV™ files for the 3 most recent years, which are calibrated to the CMS weight files of the corresponding year. The files are independent across grouper versions; therefore TCRRVs™ files between versions cannot be compared.



Attribution (i.e. analysis group) is used to cluster patients into groups of interest or target populations. The user can define their own attribution methodology based on an interested analysis group (e.g. zip code, county, state, age band, medical group, physician, etc) or utilize HealthPartners' methodology.

HealthPartners' uses the term attribution to describe how health plans and others determine which provider is responsible for a member's care. It is used to connect a patient to a provider. HealthPartners' utilizes a retrospective (i.e. concurrent) attribution method that assigns patients to providers based on historical claims. In this case, attribution is performed at the end of the period measured, and thus ensures the patient actually received care from the attributed provider.

Risk adjustment refers to the adjustments made to measurement to reflect the health status of patients and allows for comparability of heterogeneous populations. In essence, it levels the playing field by accounting for health status differences, ensuring measure results reflect real differences in care provided and resources used.

HealthPartners uses and recommends Johns Hopkins' Adjusted Clinical Groups (ACGs) cell-based risk adjustment to comply with NQF endorsement. However, the user can utilize a different risk adjustment methodology (e.g. Optum ERG, DxCG, etc.) in their market.

TCOC data prep grouper organizes the Total Cost of Care and Resource Use (TCOC) measures and optional utilization metrics for patient management and high cost. There are powerful analytical tools for providers, payers, employers, researchers, and government entities to make a meaningful difference in their efforts to manage population health. The measures can help pinpoint ways to make health care more affordable in ways that do not compromise quality or experience.

TCOC measures are applied to all services within the health care system and are drillable to support affordability opportunity identification at the service level.

- Professional
- Inpatient
- Outpatient
- Pharmacy (optional)
- Ancillary

The comprehensive module includes utilization metrics for patient management and high cost measures.

- Patient management: E&M for primary care and specialty, lab/pathology, standard radiology, and pharmacy.
- High cost: Admits, inpatient surgery, emergency room, outpatient surgery, high-tech radiology in ER, and high-tech radiology not in ER.

Risk weights are applied to the measures and benchmarks are created for comparisons. There are 2 methods of risk adjustment that take place which are dependent on the type of risk grouper used.

1. If risk cells are available/supplied:
 - a. The overall TCOC metrics (e.g. TCI, RUI, PMPM) are risk adjusted using the supplied risk weights (i.e. MEM_RISK).
 - b. The service category TCOC metrics (e.g. IP TCI, IP RUI, IP PMPM) are risk adjusted using an Actual Value / Expected Value method based on the supplied risk cells.
 - c. The optional utilization metrics are risk adjusted using the Actual Value / Expected Value method based on age, gender and the supplied risk cells.
2. If risk cells are not available/supplied:
 - a. The overall and service category TCOC metrics (e.g. TCI, RUI, PMPM) are risk adjusted using the supplied risk weights (i.e. MEM_RISK).
 - b. The optional utilization metrics are age and gender adjusted only.



The summary **report** is an effective visual to display the TCOC and utilization metrics in an efficient manner at multiple analysis levels. This analytical framework is designed to support affordability initiatives, to identify instances of overuse/inefficiency, and to highlight cost-saving opportunities.

Software & Samples

HealthPartners provides SAS grouper code as a convenience to the user to ensure consistent application of the measures. Prior to using the SAS grouper code, the user will need to format their data as necessary to meet the input specifications. The user should also have a complete understanding of their data, the fields required, and how health care claims are submitted and processed.

The SAS grouper code provided does not mitigate the user's responsibility to ensure that the underlying inputs are accurate to perform the desired analysis. Quality control checks should be performed on the underlying data to ensure the accuracy of the measures.

There is validation included in the SAS grouper code that will describe the user's data and determine how comprehensive and effective the application was performed. The SAS grouper also outputs summarized datasets that can be analyzed to troubleshoot the application process.

Sample input files, sample output files, corresponding SAS programs, and sample validation files are included with the SAS grouper software. The user can run the SAS programs using the sample input data, which should generate output and validation files that exactly match the sample output and validation file supplied. This will give the user a general idea of how the process works. The sample input data also gives the user a template to follow when setting up their data. Note that the paid amounts supplied are for illustrative purposes only and do not reflect actual paid amounts.

SAS Grouper Programs

Ensure the following SAS programs are included in your HealthPartners' email download. All file names will end in both "_parameters_YYYY.sas" and "_macro_YYYY.sas." There should be 20 SAS programs.

1. 00100_facil_clms
2. 00200_prof_clms
3. 00300_rx_clms
4. 00350_align_price_points
5. 00400_attribution
6. 00500_data_prep
7. 00701_create_pd_adj_factor
8. 00801_apply_pd_adj_factor
9. 00950_weight_creation
10. 01050_tcoc_create_report

SAS Data Set Files

Ensure the following SAS data set files are included in your HealthPartners' email download. There are 3 sets of each for the 3 most current years and all file names will end in "_YYYY.sas7bat." There is only one data set file for surg_drg_list and file names will end in ".sas7bat." There should be 19 SAS data sets.

1. addb_status_a
2. asc_ambulatory_procedures
3. hp_ip_tcrv
4. hp_op_tcrv
5. hp_prof_tcrv
6. hp_rx_tcrv
7. surg_drg_list

TCOC Analytic Package Application

Complete the below steps in sequence to produce the TCOC Analytic Package. The instructions explain how to apply the TCRRVs™ to health care claim data, attribute members to an analysis group (optional – e.g. primary care provider or user defined), risk adjust, facilitate the calculation of the TCOC measures and utilization metrics, and display data in a meaningful visual.

1. Run the TCRRV™ SAS grouper (required).
 - Total Care Relative Resource Values (TCRRVs™) quantify resource use for all procedures and services in the health care system.
 - Note that **MEMBER_ID, BRAND_GENERIC_IND and PAID_DAYS_SUP_QTY are required** on the TCRRV™ input file(s) for calculation of the TCOC measures and utilization metrics.
 - Click here for [SAS user instructions on TCRRV™ application](#) (pages 3-9).
2. Attribute patients to an analysis group by running the attribution SAS grouper (*optional*).
 - If analysis group comparisons are needed, the attribution SAS grouper creates an attribution file that assigns patients to a target group.
 - Click here for [SAS user instructions on attribution application](#) (pages 1-3).
3. Assign patient relative risk weights by applying the risk adjustment application (required).
 - The risk adjustment application creates a risk file that will be used to calculate risk adjusted measures.
 - There are 2 input options for risk adjustment.
 - i. Johns Hopkins' Adjusted Clinical Groups (ACGs) using cell-based risk adjustment. – HealthPartners recommended and NQF endorsed.
 - ii. User defined risk adjustment.
 - If user defined risk adjustment is selected, there are 2 methods for cell-based risk adjustment groupings for populating ACG_CODE.
 - i. User defined groupings. – User populates ACG_CODE within ACG_FILE with user defined groupings.
 - ii. No groupings needed. – User leaves ACG_CODE blank.
 - Note that the **risk file is named ACG_FILE** rather than RISK_FILE as stated in the risk adjustment user guide.
 - Click here for [SAS user instructions on risk adjustment application](#) (pages 1-2).
4. Run the TCOC data prep SAS grouper (required).
 - The TCOC data prep SAS grouper categories service component spend and TCRRVs and also creates optional utilization metrics (comprehensive module) for patient management and high cost metrics.
 - Click here for [SAS user instructions on prep application](#) (pages 1-3).
5. Run the user defined paid adjustment factor grouper (optional)
 - The paid adjustment factor SAS grouper aligns the TCRRVs with the allowed amount by place of service. This process is recommended and will result in a price (paid/DD_TCRRV) equal to 1.00 for each component of care.
 - Click here for the [SAS user instructions on the user defined paid adjustment factors](#).



6. Run the weight creation SAS grouper (required).
 - The weight creation SAS grouper creates risk adjusted benchmarks.
 - Click here for [SAS user instructions on weight creation application](#) (pages 1-4).

7. Run the report creation SAS grouper (required).
 - The report creation SAS grouper calculates the TCOC and optional utilization measures and summarizes the data in an effective visual.
 - Click here for [SAS user instructions on report creation application](#) (pages 1-3).