

**CMS 30-DAY ALL-CAUSE HOSPITAL READMISSION (ACR) MEASURE: MIPS  
PERFORMANCE YEAR 2018**

**SAS PACK SOFTWARE DOCUMENTATION**

**Submitted by Yale New Haven Health Services Corporation - Center for  
Outcomes Research and Evaluation (YNHHSC/CORE)**

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## 1. Introduction

This document describes the details for implementing the performance year (PY) 2018 30-Day All-Cause Hospital Readmission (ACR) Measure SAS package (SAS pack) created to validate the Centers for Medicare & Medicaid Services (CMS) unplanned 30-day risk-standardized readmission rates calculated for eligible clinician groups and solo practitioners, as identified by their Medicare Taxpayer Identification Number (TIN).

This TIN-level, risk-standardized, all-cause unplanned readmission measure is adapted from a hospital-level quality measure (Horwitz et al. 2011) developed for the Centers for Medicare & Medicaid Services (CMS) by the Yale New Haven Health Services Corporation - Center for Outcomes Research & Evaluation (YNHHSC/CORE). This version of the measure is based on the measure updates developed for CMS by YNHHSC/CORE in 2018 with additional updates for new International Classification of Diseases (ICD)-10 Clinical Modification (CM) codes. The technical specifications for the measure are available at <https://qpp.cms.gov/about/resource-library>, where the following filters are applied under the Full Resource Library section:

1. Set the Performance Year to “2018”
2. Set the QPP Reporting Track to “MIPS”
3. Set the Performance Category to “Quality”
4. Select “View All” at bottom of page
5. Choose link for “2018 30-day All-Cause Hospital Readmission Measure Specifications”.  
The following documents are available:
  - 2018 MIPS Quality Performance Category Measure Information for the 30-Day All-Cause Hospital Readmission Measure
  - 2018 ACR MIF Code Tables

The PY 2018 ACR measure SAS pack is comprised of two SAS programs. Also needed are one SAS format file with Agency for Healthcare Research and Quality (AHRQ) Clinical Classification System codes and one SAS dataset containing Condition Categories (CCs). The main SAS program calls a separate program containing SAS macros and the two mapping files:

- 600\_sas\_pack\_all\_cause\_PY2018.sas (main program), calls:
- all\_cause\_readmission\_macros\_PY2018.sas
- dxicdhcc.sas7bdat– crosswalk of FY2018 Internal Classification of Diseases, Clinical Modification (ICD-10-CM) codes to v22 CMS CCs
- formats.sas7bcats – crosswalk of ICD-10-CM and ICD-10-PCS codes to v2018.1 AHRQ CCS diagnosis and procedure groups, respectively

The program is designed to be run with one year of data. They require specific datasets and formats as explained in [Section 3](#). This document provides examples of the input files and output datasets that can be expected once the program has run successfully.

## 2. System Requirements

The computer system needed to run the SAS pack should meet the following hardware and software basic requirements:

- Operating System: Microsoft Windows XP Professional or later versions and Linux
- Statistical Software: SAS 9.3.0 or later versions
- Hardware: minimum 2 GB RAM and minimum 50 GB hard drive space

## 3. Input Data Sources

The ACR Measure SAS pack utilizes pre-processed CMS administrative data to conduct analyses. The following data sources are used in the ACR Measure SAS pack:

- Index Hospital Discharge File – Includes:
  - Part A data for discharges selected for inclusion in the measure for the reporting year(s) and condition of interest
  - Demographic and Fee-for-Service (FFS) enrollment information from the Medicare Enrollment Database and Denominator file
- Post-Index Hospital Discharge File – Includes:
  - Records of subsequent admissions for patients in the index discharge file
  - Part A discharge data for admissions that occurred within 30 days after the index discharge date
- Diagnosis History File – Includes:
  - Records for patients with index admissions
  - Diagnosis codes selected for 365 days prior to index admission
  - Diagnoses from Part A Inpatient Data
- Source code, which indicates the source file from which the diagnosis code was extracted (primary or secondary inpatient diagnosis)
  - Attribution File – Includes:
    - Records linking Medicare beneficiaries to the TIN that provided more primary care services, as measured by allowed charges, during 2018 than any other TIN

### 3.1 Index File

The variable names, data formats, and data structures in each input file must match the data standards described in the data specifications. The record unit for the Index Discharge file is at the patient discharge. Display 1 shows the SAS file data structure for the index inpatient discharge file.

**Display 1. Variables and Attributes of the Index Hospital Discharge File**

| Variable                                | Type | Length | Label                                                    |
|-----------------------------------------|------|--------|----------------------------------------------------------|
| ADMMO                                   | Num  | 8      |                                                          |
| BENE_EQTBL_BIC_HICN_NUM                 | Char | 11     | BENE_EQTBL_BIC_HICN_NUM                                  |
| DISMO                                   | Num  | 8      |                                                          |
| GROUP                                   | Num  | 8      | TRANSFER BUNDLE INDICATOR                                |
| HISTORY_CASE                            | Num  | 8      | REVISED CASE NUMBER FOR MERGING INDEX AND HISTORY FILES  |
| PARA                                    | Num  | 8      | PART A FFS ENROLLEE AT ADMISSION                         |
| PARA_B                                  | Num  | 8      | PART A AND B FFS ENROLLEE AT ADMISSION                   |
| PART_A_BUYIN_2015-<br>PART_A_BUYIN_2018 | Char | 12     | PART A BUYIN FLAGS 2015-2018                             |
| PART_A_HMO_2015-<br>PART_A_HMO_2018     | Char | 12     | PART A HMO FLAGS 2015-2018                               |
| PART_B_BUYIN_2015-<br>PART_B_BUYIN_2018 | Char | 12     | PART B BUYIN FLAGS 2015-2018                             |
| PART_B_HMO_2015-<br>PART_B_HMO_2018     | Char | 12     | PART B HMO 2015-2018                                     |
| POSTD                                   | Num  | 8      |                                                          |
| POSTMO                                  | Num  | 8      | POST-ADMISSION COMPLETENESS INDICATOR                    |
| POSTMOD                                 | Num  | 8      | POST-DISCHARGE COMPLETENES INDICATOR                     |
| POSTMOD_A                               | Num  | 8      | POST-DISCHARGE COMPLETENES INDICATOR - PTA Only          |
| POSTMO_A                                | Num  | 8      | POST-ADMISSION COMPLETENESS INDICATOR - PTA Only         |
| POST_FLAG                               | Num  | 8      | Flag for transfers out at end of period                  |
| PREMO                                   | Num  | 8      | PRE-ADMISSION COMPLETENESS INDICATOR                     |
| PREMO_A                                 | Num  | 8      | PRE-ADMISSION COMPLETENESS INDICATOR - PTA ONLY          |
| PROC1-PROC25                            | Char | 7      | CLM_PRCDR_CD(1-25): Claim Procedure Code                 |
| PROCDT1-PROCDT25                        | Num  | 8      | CLM_PRCDR_PRFRM_DT(1-25): Claim Procedure Performed Date |
| PSTATE                                  | Char | 20     | MEDICARE PROVIDER STATE CODE                             |
| TRANS                                   | Num  | 8      | 1=STAY IS PART OF A TRANSFER CHAIN                       |
| TRANS_FIRST                             | Num  | 8      | FIRST STAY IN A TRANSFER CHAIN                           |
| TRANS_LAST                              | Num  | 8      | LAST STAY IN A TRANSFER CHAIN                            |
| TRANS_MID                               | Num  | 8      | MIDDLE STAY IN A TRANSFER CHAIN                          |
| YEAR                                    | Char | 4      | YEAR COHORT BASED ON DISCHARGE DATE                      |
| ADMSN_DT                                | Num  | 8      | ADMISSION DATE                                           |
| ASTH                                    | Num  | 8      | FINAL FLAG FOR CHRONIC CONDITION ASTH (ASTHMA)           |
| BENE_DOB                                | Num  | 8      | BENE_DOB                                                 |
| BENE_FIRST_NAME                         | Char | 30     | BENE_FIRST_NAME                                          |
| BENE_LAST_NAME                          | Char | 40     | BENE_LAST_NAME                                           |
| BENE_SK                                 | Num  | 8      | BENE_SK                                                  |
| BID_MPR_3                               | Char | 11     | BENE_SK: BENEFICIARY IDENTIFICATION NUMBER               |
| BIRTH                                   | Num  | 8      | DATE OF BIRTH                                            |
| BUYIN_DEATH_MOD                         | Num  | 8      | BUYIN_DEATH_MOD                                          |
| CASE                                    | Num  | 8      | INDEX CASE NUMBER WITH TRANSFERS CONSECUTIVELY NUMBERED  |

| Variable               | Type | Length | Label                                                                                                       |
|------------------------|------|--------|-------------------------------------------------------------------------------------------------------------|
| CLM_DGNS_PRCDR_ICD_IND | Char | 1      | CLM_DGNS_PRCDR_ICD_IND: THIS IS THE CLAIM PROD VERSION CODE WHICH IS SPACES OR 9 FOR ICD 9 AND 0 FOR ICD 10 |
| COUNTER                | Num  | 8      |                                                                                                             |
| DDEST                  | Num  | 8      | DISCHARGE DESTINATION CODE                                                                                  |
| DEATH                  | Num  | 8      | DATE OF DEATH                                                                                               |
| DEATH_DT               | Num  | 8      | DEATH_DT                                                                                                    |
| DIAG1-DIAG25           | Char | 7      | CLM_DGNS_CD(1-25): CLAIM DIAGNOSIS CODE                                                                     |
| DIED_17                | Num  | 8      | DIED_17                                                                                                     |
| DSCHRGDT               | Num  | 8      | DISCHARGE DATE                                                                                              |
| EDGNSD01-EDGNSD12      | Char | 7      | CLM_DGNS_E_CD(01-12): CLAIM DIAGNOSIS E CODE                                                                |
| HICAN                  | Char | 11     | HICAN                                                                                                       |
| NUM_COND               | Num  | 8      | NUMBER OF CHRONIC CONDITIONS FOR THE BENEFICIARY                                                            |
| PROVIDER               | Char | 20     |                                                                                                             |
| REHAB_IND              | Num  | 20     |                                                                                                             |
| SEX                    | Char | 1      | BENEFICIARY SEX FROM EDB                                                                                    |
| SHORT_STAY             | Num  | 8      | FLAG INDICATING A SHORT STAY HOSPITAL                                                                       |
| STAYID                 | Num  | 8      | UNIQUE IDENTIFIER FOR A STAY (MULTIPLE CLAIMS)                                                              |
| STAYSEQ                | Num  | 8      | SEQUENCE OF CLAIMS WITHIN A STAY SERIES (I.E. STAYID)                                                       |
| STUS_CD                | Char | 2      | PTNT_DSCHRG_STUS_CD: PATIENT DISCHARGE STATUS CODE                                                          |
| TXFLAG                 | Num  | 8      | 1=TRANSFER, 1=DIED, 0=OTHERWISE                                                                             |
| V_DOD_SW               | Char | 1      | V_DOD_SW                                                                                                    |

### 3.2 Post-Index Hospital Discharge File

In order to determine whether a readmission took place, the ACR Measure SAS pack requires inpatient claims data for up to 30 days after the index discharge date. This information is captured in a separate file that contains information similar to the Index Discharge file, although with fewer fields. The file includes inpatient claims for up to 90 days after discharge, but the software chooses those within 30 days to create the outcome indicator. Display 2 shows the SAS file structure of the Post-Index file. This file can be linked to the Index Discharge file by HIC number and CASE identifier.

#### Display 2. Variables and Attributes of the Post-Index Hospital Discharge File

| Variable               | Type | Len | Label                                                                                                       |
|------------------------|------|-----|-------------------------------------------------------------------------------------------------------------|
| ADMDIFF                | Num  | 8   | DAYS BETWEEN INDEX DISCHARGE AND POST INDEX ADMISSION                                                       |
| ADMDT1-ADMDT71         | Num  | 8   | ADMISSION DATE #1-#71                                                                                       |
| CASE                   | Num  | 8   | CASE NUMBER FROM INDEX EVENT RECORD                                                                         |
| DISDT1-DISDT71         | Num  | 8   | DISCHARGE DATE #1-#71                                                                                       |
| LOS                    | Num  | 8   | LENGTH OF STAY                                                                                              |
| PROC1-PROC25           | Char | 7   | PROCEDURE CODE #1-#25                                                                                       |
| PROCDT1-PROCDT25       | Num  | 8   | PROCEDURE DATE #1-#25                                                                                       |
| PROVID1-PROVID71       | Char | 20  | PROVIDER ID #1-#71                                                                                          |
| ADMSN_DT               | Num  | 8   | DATE OF ADMISSION                                                                                           |
| BID_MPR_3              | Char | 11  | BENE_SK: Beneficiary Identification Number                                                                  |
| CLM_DGNS_PRCDR_ICD_IND | Char | 1   | CLM_DGNS_PRCDR_ICD_IND: This is the Claim Prod Version code which is spaces or 9 for ICD 9 and 0 for ICD 10 |
| DDEST                  | Num  | 8   | DISCHARGE DESTINATION CODE                                                                                  |
| DIAG1-DIAG25           | Char | 7   | DIAGNOSIS Code #1-#25                                                                                       |

| Variable          | Type | Len | Label                                                 |
|-------------------|------|-----|-------------------------------------------------------|
| DSCHRGDT          | Num  | 8   | DATE OF DISCHARGE                                     |
| EDGNSD01-EDGNSD12 | Char | 7   | CLM_DGNS_E_CD(01-12): Claim Diagnosis E Code          |
| POST_QA_CHECK     | Num  | 8   |                                                       |
| POSTCOUNTER       | Num  | 8   |                                                       |
| PROVIDER          | Char | 20  |                                                       |
| REHAB_IND         | Num  | 8   |                                                       |
| SHORT_STAY        | Num  | 8   | Flag indicating a short stay hospital                 |
| STAYID            | Num  | 8   | Unique identifier for a stay (multiple claims)        |
| STAYSEQ           | Num  | 8   | Sequence of claims within a stay series (i.e. stayid) |
| STUS_CD           | Char | 2   | PTNT_DSCHRG_STUS_CD: Patient Discharge Status Code    |
| TXFLAG            | Num  | 8   |                                                       |

### 3.3 Diagnosis History Files

The Diagnosis History file is used to assign comorbidities for risk adjustment, based on 12 months of claims history for the patients in the index file. These files are at the diagnosis/procedure date level and can be linked back to the index file by HICNO and CASE number by using the HICNO and HISTORY\_CASE on the index file. The SOURCE field is used to determine what data repository the information came from. Display 3 shows the file layout for the diagnosis history file.

#### Display 3. Variables and Attributes of the Diagnosis History File

| Variable  | Type | Len | Label                                                                                                       |
|-----------|------|-----|-------------------------------------------------------------------------------------------------------------|
| CASE      | Num  | 8   | CASE NUMBER MARKER                                                                                          |
| DIAG      | Char | 7   | DIAGNOSIS CODE                                                                                              |
| FDATE     | Num  | 8   | ADMISSION DT (IP)                                                                                           |
| SOURCE    | Char | 7   | 4 DIGIT SOURCE CODE                                                                                         |
| TDATE     | Num  | 8   | DISCHARGE DT (IP)                                                                                           |
| VRSN      | Char | 1   | CLMS_DGNS_PRCDR_ICD_IND: THIS IS THE CLAIM PROD VERSION CODE WHICH IS SPACES OR 9 FOR ICD 9 OR 0 FOR ICD 10 |
| BID_MPR_3 | Char | 11  | BENE_SK: BENEFICIARY IDENTIFICATION NUMBER                                                                  |

### 3.4 Attribution File

The Attribution file associates each beneficiary with a TIN based on the amount of primary care services that the beneficiary received in 2018, as measured by allowed charges. The ACR measure is computed for each TIN using the set of patients attributed to the TIN. Display 4 shows the file layout for the Attribution file.

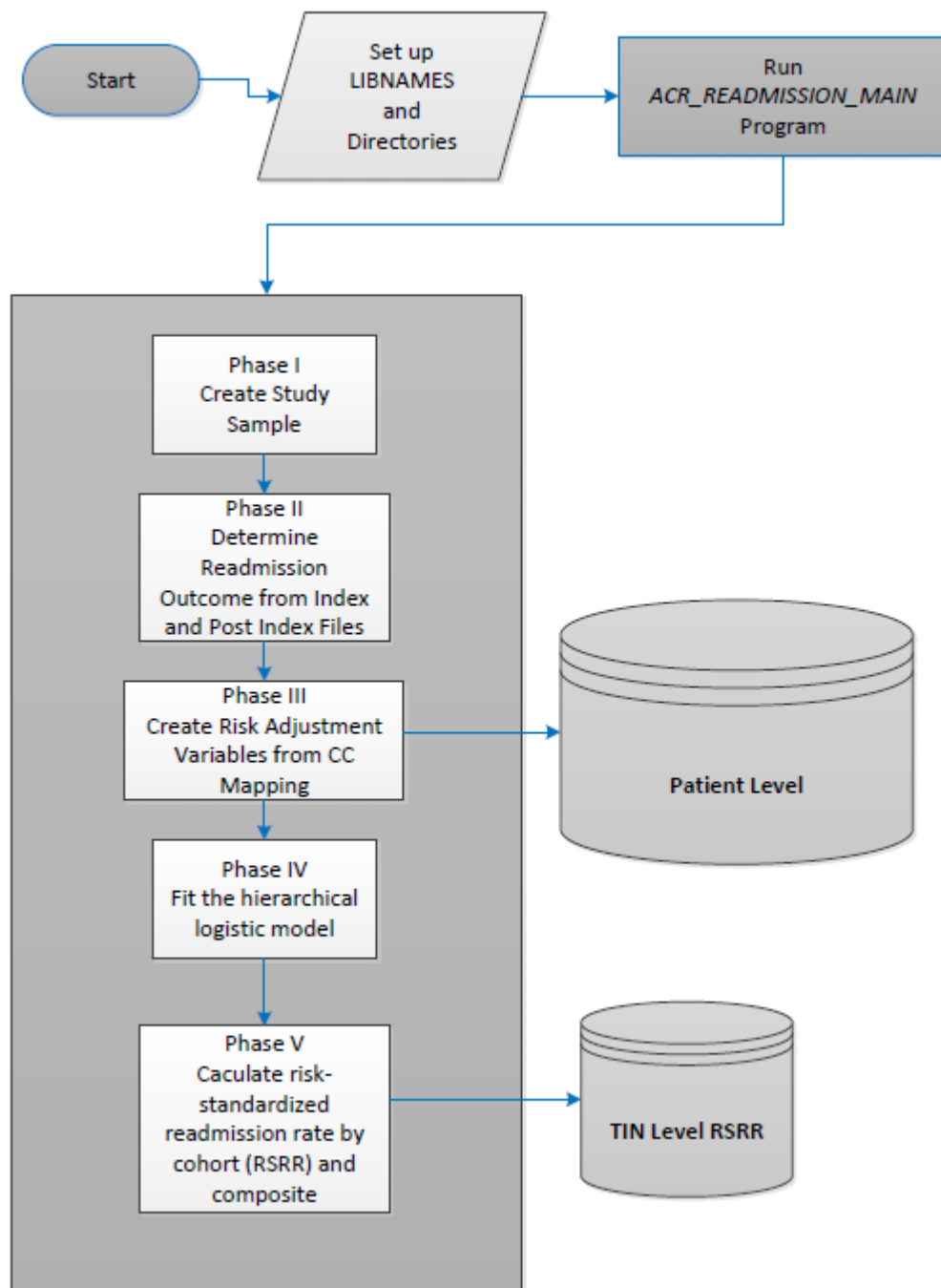
#### Display 4. Variables and Attributes of the Attribution File

| Variable     | Type | Len | Label                                                                      |
|--------------|------|-----|----------------------------------------------------------------------------|
| ATTRIB_STEP  | Num  | 8   | STEP BY WHICH BENEFICIARY WAS ATTRIBUTED TO TIN: 1 OR 2                    |
| BENE_SK      | Num  | 8   | IDR BENEFICIARY ID                                                         |
| BID_MPR_3    | Char | 11  | BID_MPR_3                                                                  |
| TIEBREAK1    | Num  | 8   | EQUALS 1 IF TIE FOR PLURALITY OF ALLOWED CHARGES FOR PRIMARY CARE SERVICES |
| TIEBREAK2    | Num  | 8   | EQUALS 1 IF TIE FOR MOST RECENT DATE OF SERVICE                            |
| TIN_ASSIGNED | Char | 10  | GROUP OR INDIVIDUAL TIN TO WHICH THE BENEFICIARY IS ATTRIBUTED             |

## 4. SAS Pack Structure

See [Figure 1](#) for a flow chart displaying an overview of the programs. The user can edit the SAS code of the first section of the SAS program. The user can modify the file directories that contain the input datasets, the SAS format files for Condition Category (CC) mapping and Agency for Healthcare Research and Quality (AHRQ) Clinical Classifications Software (CCS) mapping, as well as the location of the datasets to be stored. The CC mapping is maintained by RTI International. An Excel version of the map can be found on [www.qualitynet.org](http://www.qualitynet.org) under the Hospitals-Inpatient > Claims-Based and Hybrid Measures > Readmission Measures > Resources section. The AHRQ CCS map description can be obtained from the following website: <https://www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp>.

The next section of the SAS Pack is used for the derivation of the cohort and for the determination of the outcomes. The final dataset is used for the model development. The next section of the code is used to run the cohort data through the hierarchical model to create TIN-level results. These results are then used to create the TIN-level risk-standardized readmission rates (RSRRs) and composite ACR measure. The output is a SAS dataset called ACR\_RSRR, which has all cohort-level and composite measures at the TIN-level.

**Figure 1. SAS Process Flow Chart**

## 5. Output Data

The SAS pack creates four permanent output files in SAS dataset format. These files will be written to the directory the user designates in the first section of the program. The files are as follows:

1. Final master dataset – Patient Level (ACR\_readm\_all.sas7bdat)
2. Final study sample – Patient Level (ACR\_readm\_analysis.sas7bdat)
3. TIN-Level RSRR (ACR\_readm\_rsrr.sas7bdat)

The final master dataset contains all admissions in the original cohorts along with the inclusion/exclusion indicators assigned in the program. The final study sample file contains all risk adjustment variables and the readmission indicators for admissions that are included in the measure calculation. The unit of measure for this file is at the hospital discharge level. The final study sample file is further used as the primary data source for conducting the model analyses. Display 5 shows a portion of this file. Please refer to the actual SAS programs to learn how the risk adjustment variables were defined.

**Display 5. Sample Observations from Case-Level Output File (ACR\_Readm\_Analysis)**

| RADM30 | Cohort            | Severe Infection (CC 1, 3-5) | Metastatic cancer/acute leukemia (CC 7) | Severe Cancer (CC 8, 9) | Diabetes mellitus (CC 15-20, 119, 120) | End-stage liver disease (CC 25, 26) |
|--------|-------------------|------------------------------|-----------------------------------------|-------------------------|----------------------------------------|-------------------------------------|
| 0      | CARDIORESPIRATORY | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 1      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | NEUROLOGY         | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 1                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | CARDIORESPIRATORY | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | CARDIORESPIRATORY | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | NEUROLOGY         | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | NEUROLOGY         | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 1                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | CV                | 0                            | 0                                       | 0                       | 1                                      | 0                                   |
| 0      | CARDIORESPIRATORY | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 1                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 1                                      | 0                                   |
| 0      | SURGICAL          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 0      | CARDIORESPIRATORY | 0                            | 0                                       | 0                       | 0                                      | 0                                   |
| 1      | MEDICINE          | 0                            | 0                                       | 0                       | 0                                      | 0                                   |

The TIN-Level RSRR file includes the TIN identifier, total number of cases (volume), observed readmission rate (OBS), predicted readmission rate (PRED), expected readmission rate (EXP), risk-standardized readmission ratio (SRR), and risk-standardized readmission rate (RSRR) as shown in Display 6. The data contained in this file is at the TIN level and provides the point estimates of the readmission rate for each TIN.

**Display 6. Sample Observations from TIN-Level Output File (ACR\_Readm\_Rsrr)**

| Medicare provider number | VOLUME | READMISSION | READM_PLAN | OBS_MED      | RADM30_MED | RADM30P_MED | SRR_MED      | RSRR_MED     | VOLUME_MED | OBS_SURG     | RADM30_SURG |
|--------------------------|--------|-------------|------------|--------------|------------|-------------|--------------|--------------|------------|--------------|-------------|
|                          | 5309   | 760         | 57         | 0.1620635748 | 311        | 20          | 0.9960766014 | 0.167783127  | 1919       | 0.103268945  | 139         |
|                          | 2790   | 415         | 35         | 0.1529503106 | 197        | 17          | 0.9948780459 | 0.1675812376 | 1288       | 0.1162790698 | 55          |
|                          | 4068   | 606         | 52         | 0.1578947368 | 255        | 17          | 0.9928517593 | 0.1672399217 | 1615       | 0.1118335501 | 86          |
|                          | 502    | 72          | 2          | 0.147601476  | 40         | 2           | 1.0317691652 | 0.1737953253 | 271        | 0.1          | 4           |
|                          | 135    | 10          | 0          | 0.0930232558 | 8          | 0           | 0.9614984402 | 0.1619586433 | 86         | 0            | 0           |
|                          | 2688   | 351         | 31         | 0.1580063627 | 149        | 9           | 0.9942037239 | 0.1674676521 | 943        | 0.0977835724 | 75          |
|                          | 830    | 126         | 7          | 0.1466346154 | 61         | 5           | 1.0065208439 | 0.169542397  | 416        | 0.1071428571 | 9           |
|                          | 2444   | 340         | 27         | 0.1444906445 | 139        | 15          | 0.9050166706 | 0.1524446281 | 962        | 0.125        | 75          |
|                          | 24     | 1           | 1          | 0.3333333333 | 1          | 0           | 1.0107067982 | 0.1702474959 | 3          | 0            | 0           |
|                          | 2032   | 305         | 17         | 0.182983683  | 157        | 9           | 1.1213624832 | 0.1888867821 | 858        | 0.085106383  | 40          |
|                          | 380    | 50          | 3          | 0.1277777778 | 23         | 2           | 0.9160433553 | 0.1543020069 | 180        | 0.18         | 9           |
|                          | 203    | 31          | 1          | 0.2095238095 | 22         | 1           | 1.0623969965 | 0.1789543997 | 105        | 0.2          | 1           |
|                          | 3136   | 480         | 40         | 0.1843575419 | 165        | 11          | 1.0384041272 | 0.1749129448 | 895        | 0.1153136531 | 125         |
|                          | 3214   | 447         | 32         | 0.1600633914 | 202        | 14          | 0.9475826402 | 0.1596146102 | 1262       | 0.0997679814 | 86          |
|                          | 383    | 45          | 2          | 0.1144278607 | 23         | 1           | 0.9100750504 | 0.1532966818 | 201        | 0.027027027  | 1           |
|                          | 3900   | 542         | 58         | 0.1539923954 | 243        | 25          | 0.9779682074 | 0.1647328767 | 1578       | 0.1050620821 | 110         |
|                          | 137    | 19          | 2          | 0.1692307692 | 11         | 2           | 1.0244795764 | 0.1725674378 | 65         | 0            | 0           |
|                          | 5949   | 1015        | 87         | 0.2131661442 | 408        | 34          | 1.1048226349 | 0.1861007439 | 1914       | 0.1464943204 | 374         |
|                          | 445    | 59          | 5          | 0.1352459016 | 33         | 4           | 0.9698749634 | 0.1633696183 | 244        | 0.2          | 5           |
|                          | 2183   | 315         | 23         | 0.1570482498 | 166        | 10          | 0.9875610974 | 0.1663487415 | 1057       | 0.0798004988 | 32          |
|                          | 1039   | 160         | 9          | 0.1559633028 | 68         | 5           | 0.9938791345 | 0.1674129769 | 436        | 0.1134020619 | 22          |
|                          | 905    | 133         | 12         | 0.1510791367 | 63         | 5           | 0.9958053478 | 0.167737436  | 417        | 0.0776699029 | 8           |
|                          | 10681  | 1441        | 126        | 0.1576502732 | 577        | 38          | 0.9384287518 | 0.1580726927 | 3660       | 0.0976995172 | 344         |
|                          | 3366   | 553         | 36         | 0.1805243446 | 241        | 12          | 1.0797198585 | 0.1818723318 | 1335       | 0.1405472637 | 113         |
|                          | 199    | 20          | 4          | 0.099009901  | 10         | 3           | 0.9351139319 | 0.1575143312 | 101        | 0.3333333333 | 1           |
|                          | 385    | 69          | 2          | 0.1734693878 | 34         | 1           | 1.0160724029 | 0.1711512998 | 196        | 0            | 0           |

## 6. SAS Pack Usage

The following steps outline the procedures for running the ACR Measure SAS pack:

1. Specify the file directories for where the input resides and where the output will be placed, including the CC map and the AHRQ CCS format library location.
2. Add the input file names and result file names in all\_cause\_readmission\_PY2018.SAS (use the library prefix you created if you wish to save the files).
3. Run Program all\_cause\_readmission\_PY2018.SAS.