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**CENTERS FOR MEDICARE & MEDICAID SERVICES**

**CY 2024 PART C**

**BASELINE OUT-OF-POCKET COST MODEL**

**USER GUIDE**

**DECEMBER 2023**

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## Introduction

The Out-of-Pocket Cost (OOPC) Model is a set of programs used to calculate the estimated out-of-pocket costs for a given set of beneficiaries to determine the value of the benefits being offered by a Plan Benefit Package (PBP). The purpose of the *CY 2024 Part C Baseline OOPC User Guide* is to provide Medicare Advantage Organizations (MAOs) with the technical information required to calculate their updated Contract Year (CY) 2024 OOPC values to help prepare for CY 2025 bid submissions that comply with Centers for Medicare & Medicaid Services (CMS) standards. Please note, MAOs will need to calculate their Part C & Part D OOPCs separately and combine them for their total OOPC value. MAOs are encouraged to run their plan benefit structures through the SAS OOPC Models to prepare for CY 2025 bid submissions.

### Changes in the CY 2024 Part C Baseline Out-of-Pocket Cost (OOPC) Model

The version of the CY 2024 Part C Baseline OOPC Model described in this document is an update of the Contract Year (CY) 2023 Part C Baseline OOPC Model.

For the CY 2024 Part C Baseline OOPC Model the following changes have been made:

- Updated the SAS programs to take into account 2024 Plan Benefit Package (PBP) data structure and variable name changes, which included one additional PBP category, Medicare Part B Insulin Drugs (15-1);
- Updated MCBS data (removed 2018 data and added 2020 data) and inflated the 2019 and 2020 MCBS utilization cost data to CY 2024 levels;
- Updated Medicare Part A and Part B deductibles, coinsurance to 2024 values;
- Update the model to use the HPMS JSON PBP files as an input, replacing the historical PBP Access database.

Questions may be directed as follows:

For technical questions about the OOPC Model, please submit an email to [OOPC@cms.hhs.gov](mailto:OOPC@cms.hhs.gov)

For Part C policy related questions about Total Beneficiary Cost (TBC), please contact <https://mabenefitsmailbox.lmi.org/>

For Bid Pricing Tool (BPT) questions, please submit an email to [actuarial-bids@cms.hhs.gov](mailto:actuarial-bids@cms.hhs.gov)

The CY 2024 Part C Baseline OOPC Model is designed to allow plan organizations to run their submitted benefit structures through the software code and data used by CMS to evaluate annual bid submissions. The software is the updated version of the CY 2023 Part C Baseline OOPC Model and code that was distributed to plans in January of 2023. The OOPC Model reports OOPC values by PBP-based service category at the plan level. The

section **Development of the Out-of-Pocket Cost (OOPC) Data** summarizes CMS’s process to produce the OOPC values. MAOs are encouraged to review the more comprehensive “CMS CY 2024 Part C Baseline Out-of-Pocket Cost Model Methodology December 2023” document located in the OOPC Model package and at

<https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovGenIn/OOPCResources.html>

Organizations use their own CY 2024 PBP data as input to the software (a given organization may have multiple plans for a given contract). After the user has successfully input their data for a particular contract/plan and completed all PBP sections on the Health Plan Management System (HPMS) PBP module page, the data is ready for use in the model. The model will use the JSON Files available for download from the HPMS PBP Interface as the input to the model, or JSON files created by the MAOs that follow the HPMS PBP formatting guidelines. Users download the OOPC Model software and follow the directions for copying the SAS programs and SAS data that serve as the other inputs. The user edits several small SAS programs and will then execute them to produce OOPC estimates.

The CY 2024 Part C Baseline OOPC Model package (**OOPC2024 Part C Baseline.ZIP**) consists of a set of provided input datasets (SAS transport format) and a series of SAS programs. The programs import PBP and utilization data. The SAS programs calculate costs for each service category and benefits, and summarize the costs to the plan level. The costs are output to a plan-level Excel file.

The model produces OOPC values for Part C services by utilizing their completed PBP data. This User Guide describes the contents of the OOPC software package, provides specific instructions on how to calculate OOPC values for the PBP service categories, and explains how to generate output values in the form of an Excel workbook.

## Resource Requirements

Operation of the model requires that the user be familiar with PC file management and operating SAS software.

**Model Requirements:** The model has been tested on a variety of PCs. The user will need WINZIP or a similar compressed file software to extract the OOPC Model package and enough storage space to accommodate the downloadable files that total over 100 MB (4 MB zipped). A version of PC SAS with the built-in LIBNAME engine for JSON is needed to run the model is required. The model was developed and tested using SAS Version 9.4 TS Level 1M7 on 64-bit machines using Microsoft 365. Microsoft Excel is required for generating and using the model output. Testing has been done using the Microsoft 365 version of Excel.

**Processing Time:** The processing of the data to generate the OOPC values is inherently time-consuming, but efforts have been made to make the model run as efficiently as

possible. The programs that import the various input files will run quickly. As described in the **Development of the Out-of-Pocket Cost (OOPC) Data** section, the claims data for several thousand MCBS respondents will be applied to the cost-sharing structure for each service category. In addition, features such as deductibles and plan maximums will be applied, and the costs adjusted. The process is expanded whenever values are produced for multiple plans. Running a single or a few plans at a time will shorten the run time.

## Input Datasets Included in the Software Package

### Utilization Data Provided by CMS

The software includes two primary SAS transport datasets for Part C calculations. The person-level (PERSON.XPT) file contains information on the cohort of beneficiaries in the 2019/2020 MCBS survey. The UTILIZATION.XPT file contains information on this cohort's 2019 and 2020 Medicare utilization as reported by the MCBS survey. These are used after they are converted to SAS datasets with a SAS program included in the package (CIMPORT.SAS). The CIMPORT.SAS program converts these SAS transport files into SAS datasets.

## Input Datasets Provided by the User

### Plan List

Each user will provide a text file list of the plans to be used for each calculation of OOPC values. This file (**PLANFILE.TXT**) will consist of a combined Contract/Plan/Segment identifier. For example, Contract Plan Segment: H9999 001 001 will appear as H9999001001.

### *Planfile.txt Record Layout*

**Required File Format = ASCII File - Tab Delimited**

**Do not include a header record**

**Filename extension should be “.TXT”**

Field Name	Field Type	Field Length	Field Description	Sample Field Value(s)
Contract_Plan_Segment	CHAR	11	Unique Contract/Plan/Segment identifier	H9999001000

Parts of an example file look like:

```
H9999001000
H9998002000
H9997003000
H9996001001
```

R9995004000

**Note:** Only plans in the plan list will be run in the OOPC calculation, even if more plans exist in a user's PBP database.

## PBP Data

Each year, plan personnel and other users are required to enter their benefit data into the PBP module located in HPMS in order to submit a bid. Plans are provided with instructions each year on how to enter data into the PBP module using the graphical user interface, and on how to directly upload data to HPMS via the PBP API.

**PBP Data Input to OOPC Tool:** As part of this bid creation process, the PBP data that a user entered in HPMS is available for download from HPMS as a JSON file, which will be used as an input file for the OOPC calculation(s). Plans are cautioned that any changes subsequently made directly on HPMS will not be reflected in the OOPC model unless a new JSON file is subsequently downloaded from HPMS. The OOPC model requires JSON files that are properly formatted, and that reflect all benefits offered by a plan. A SAS program in the OOPC Model can read a plan's PBP data from the JSON file and convert it to a SAS data file.

## Programs Included in the Software Package

The complete list of SAS Programs can be found in the Contents of the Zip File section. The key programs that launch the computations are described below.

**CIMPORT.SAS** converts the SAS transport files supplied with this software into SAS datasets.

**OOPCVIP.SAS** supplies user-defined parameters needed to run the OOPC Model and calls the other SAS programs that carry out the calculations.

## Instructions for Running the Model and Creating OOPC Values

Please read and follow the instructions carefully before running the software.

**Step 1:** Create a text file (**JSONFILE.TXT**) that has the name of the JSON file to be used in the OOPC run. Only **one** JSON file can be referenced in the JSONfile.TXT file. Note: The JSONfile.TXT should only have a single line denoting the PBP file to be read.

**Step 2:** Create a text file (**PLANFILE.TXT**) that lists the plans of interest. Make a note of the directory location of the file.

**Step 3:** Complete the PBP data entry for plans of interest using the HPMS PBP module and download the data. On the HPMS PBP page, click **Reports, Generate Report** from the left navigation menu. On this screen, select **2024** for **Contact Year** and then all contracts and plans that have completed PBP data you wish to include in the OOPC model.

In the **Section(s)** drop-down box, check **Select All**, and then select the “Data Report” checkbox. Next, click on the green **Download File(s)** button and select **JSON** to download a **JSON** file that contains all of the selected plans. The file is saved (most browser configurations default to the “Downloads” folder) of a user’s PC as a form of **JSON** file e.g., **PBP\_Report\_XXXXXXXXXXXXX.json**, where the **xxxx** is a string of numbers that is unique to each download. Save this **JSON** file to a designated directory: **c:\oopc\_c\pbp**; and rename the file to match the name inserted in the **JSONfile.TXT** file created in step 1. Note that the OOPC model will only read in a PBP JSON file with this name.

**Step 4:** Set up directory locations for all files.

- a. Copy the file **OOPC2024 Part C Baseline.ZIP** to a working directory (e.g., **c:\oopc\_c**) and extract its contents to that directory. At this point there will be a **programs.zip**, **input.zip**, and **inputjson.zip** file.
- b. In the working directory, extract the contents of **programs.zip** to create the **c:\oopc\_c\programs** directory for the SAS programs modified by the user.
- c. In the working directory, extract the contents of **input.zip** to create the **c:\oopc\_c\input** directory for the input files and the programs that are not changed by the user.
- d. In the working directory, extract the contents of **inputjson.zip** to create the **c:\oopc\_c\inputjson** directory for the input files and the programs that are not changed by the user.
- e. In the input directory, create a jsonlib folder (e.g., **c:\oopc\_c\input\jsonlib**).
- f. In the working directory, set up a directory for the json temporary files (e.g., **c:\oopc\_c\pbptemp**).
- g. Set up a directory for the output spreadsheet file (e.g., **c:\oopc\_c\output**).
- h. Copy the **PLANFILE.TXT** file to the newly created programs file directory. (e.g., **c:\oopc\_c\programs**).
- i. Copy the **JSONfile.TXT** file to the newly created programs file directory. (e.g., **c:\oopc\_c\programs**).

**Step 5:** Edit the program **CIMPORT.SAS** as necessary so that the location (**in bold below**) of the input data is specified for all of the .XPT files. The programs provided in the model package contain, as defaults, the directory locations listed above. The user can change these locations, as desired.

```
* PROGRAM: CIMPORT.SAS;
* DESCRIPTION: IMPORT THE INPUT FILES TO THE OOPC PROCESS;

%LET DATALOC = %str(c:\oopc_c\input);
```

Then run **CIMPORT.SAS**.

For this run, and subsequent SAS runs, check the SAS Log window to make sure the text string **ERROR** does not appear anywhere. (In the **Troubleshooting** section below are

noted several sources of common problems users have encountered when setting up and running the programs).

**Note:** The SAS CIMPORT program only needs to be run once prior to the first OOPC run.

**Step 6:** Edit the program **OOPCV1P.SAS** in the statements as shown below to indicate the directories (**in bold below**) where the SAS programs and input files are stored. The programs provided in the model package contain, as defaults, the directory locations listed above. Also, edit the program to indicate where the PBP data is stored. And finally, edit the program to identify the location and name of the output spreadsheet file. You can change the output spreadsheet name as necessary.

For example, in the “**OOPC** =&OUTPUT.**OOPC\_RUN**&file\_date.” line, to identify the first run for a given day, change the default label “**OOPC\_RUN**” to “**OOPC\_RUN1\_**.” (The “&file\_date” function automatically outputs the date of the run.)

```
* PROGRAM: OOPCV1P.SAS;
* DESCRIPTION: MAIN OOPC PROGRAM;

%LET INPUTDIR          = c:\oopc_c\input;
%LET PROGDIR           = c:\oopc_c\programs;
%LET PBPDIR            = c:\oopc_c\pbp;
%LET PLANFILEDIR       = c:\oopc_c\programs;
%LET JSONDIR           = c:\oopc_c\programs;
%LET OUTPUT            = c:\oopc_c\output;
%LET JSONFILES         = c:\oopc_c\pbp;
%LET JSONTEMP          = c:\oopc_c\pbptemp;
%LET INPUTJSONDIR      = c:\oopc_c\input\jsonlib;
%LET JSONSQL           = c:\oopc_c\inputjson;

%OOPCV1M(RUNYEAR       =2024,
        INP            =IN1.PERSON,
        INC            =IN1.UTILIZATION,
        CATEG          =IN1.CATEGORY,
        PBP            =&PBPDIR,
        PLANFILE       =&PLANFILEDIR\PLANFILE.TXT,
        OOPC           =&OUTPUT.\OOPC_RUN&file_date..xlsx);
```

Then run **OOPCV1P.SAS**.

When checking the SAS Log window for the run, you can identify the run time by looking at the last few lines of a successful run. For example:

**NOTE: The SAS System used:**

<b>real time</b>	<b>1:36.67</b>
<b>cpu time</b>	<b>43.10 seconds</b>



The resulting Excel spreadsheet file (.xlsx) will exist in the designated output file directory when the program finishes running successfully. The category fields display the expected average monthly cost for the contract plan segment by PBP-based benefit category. **Total** displays the sum of the categories.

**Note:** A separate, calculated plan level deductible category allocation is not displayed. Plan deductible calculations are attributed proportionately and included in the individual category estimates.

An example (truncated) of the resulting spreadsheet output is shown below (test data):

Benefit_Year	Inpatient_Hospital_Acute_Care	Emergency/Post-Stabilization_Services	Preventative_Dental	SET_PAD	Total
2024	29.70475553	3.52438851	27.69364699	0.001211308	104.2986934
2024	27.36812812	2.873725065	6.987928532	0.000605654	69.49486855
2024	16.18722579	2.430721123	11.91780177	0.000908481	85.70176048
2024	17.4540254	3.554486322	4.821329492	0.000423958	69.33303241
2024	25.95469822	3.468770031	30.69364699	0.000605654	166.3384746
2024	52.33865634	5.977106911	18.02296168	0.004338336	117.7595035
2024	21.73713597	3.590236547	12.16387446	0.001366564	83.66446148
2024	36.12993734	2.866419607	13.80810401	0.001366564	112.2664831
2024	26.36196973	0	20.04349442	0.001144819	49.12369377
2024	26.36196973	4.170569846	8.218208835	0.001144819	44.98534377
2024	31.18464107	3.455011634	16.17176393	0.000908323	107.9583772

## Rerunning the Model

**Change Plan Benefits for a Plan:** To change the plan benefit assumptions, for the same plan(s), modify the appropriate PBP data entry and download a new JSON file.

**Change Plans:** To change plans, modify the PBP data entry, change the PLANFILE.TXT. If the PBP data entry is in a different JSON file you will need to update the reference in JSONfile.TXT

**For any of the above changes,** after changing input files, and rerunning as necessary, rerun **OOPCVIP.SAS**, while changing the Excel output file name.

## Contents of the Output (Excel) File

The output from the OOPC Model is a single Excel file. The table below lists the labels as they appear in the output file and in the corresponding detailed heading.

**Note:** Labels used in the output file are restricted to no more than 32 characters by SAS.

Label Used in Output Files	Detailed Heading/Description
Contract_Number	Contract Number
Plan_ID	Plan ID
Segment_ID	Segment ID
Organization_Marketing_Name	Organization Marketing Name
Plan_Name	Plan Name

Label Used in Output Files	Detailed Heading/Description
Benefit_Year	Benefit Year/PBP for Estimated OOPC Value
Inpatient_Hospital_Acute_Care	Inpatient Hospital Services including Acute OOPC Value
Inpatient_Mental_Health_Care	Inpatient Psychiatric Hospital Services OOPC Value
Skilled_Nursing_Facility	Skilled Nursing Facility (SNF) OOPC Value
Cardiac_Rehabilitation_Services	Cardiac Rehabilitation Services OOPC Value
Pulmonary_Rehab_Services	Pulmonary Rehabilitation Services OOPC Value
Emergency/Post-Stabilization_Services	Emergency Services OOPC Value
Urgently_Needed_Services	Urgently Needed Services OOPC Value
Home_Health_Agency	Home Health Services OOPC Value
Primary_Care_Physician	Primary Care Physician Services OOPC Value
Chiropractic_Services	Chiropractic Services OOPC Value
Occupational_Therapy	Occupational Therapy Services OOPC Value
Physician_Specialists	Physician Specialist Services OOPC Value
Outpatient_Mental_Health_Care	Mental Health Specialty Services - Non-Physician OOPC Value
Podiatry_Services	Podiatry Services OOPC Value
Other_Health_Professionals	Other Health Care Professional Services OOPC Value
Psychiatric_Care	Psychiatric Services OOPC Value
Physical_and_Speech_Therapy	Physical Therapy and Speech-Language Pathology Services OOPC Value
Outpatient_Lab	Outpatient Lab Services OOPC Value
Diagnostic_Tests_and_Procedures	Outpatient Diagnostic Tests/Procedures OOPC Value
Therapeutic_Radiation	Therapeutic Radiological Services OOPC Value
Outpatient_X_Rays	Outpatient X-Ray Services OOPC Value
Diagnostic_Radiological_Services	Diagnostic Radiological Services OOPC Value
Outpatient_Hospital_Services	Outpatient Hospital Services OOPC Value
Ambulatory_Surgical_Center	Ambulatory Surgical Center (ASC) Services OOPC Value
Chemotherapy/Radiation_Drugs	Medicare Part B Chemotherapy/Radiation Drugs OOPC Value
Ambulance	Ambulance Services OOPC Value
Durable_Medical_Equipment	Durable Medical Equipment (DME) OOPC Value
Prosthetic_Devices	Prosthetics and Other Medical Supplies OOPC Value
Renal_Dialysis	Dialysis Services OOPC Value
Diabetes_Education	Diabetes Education OOPC Value
Medicare_Covered_Part_B_Drugs	Medicare Part B Prescription Drugs OOPC Value
Preventive_Dental	Preventive Dental OOPC Value
Comprehensive_Dental	Comprehensive Dental OOPC Value
Eye_Exams	Eye Exams OOPC Value
Hearing_Exams	Hearing Exams OOPC Value
Opioid_Treatment_Program	Opioid Treatment Program Services OOPC Value

Label Used in Output Files	Detailed Heading/Description
SET_PAD	Supervised Exercise Therapy (SET) for Symptomatic Peripheral Artery Disease (PAD) Services OOPC Value
Medicare_Covered_Partb_Insulin_Drugs	Medicare Part B Insulin Drugs OOPC Value
Total	Total Costs (Including calculated plan deductible)

## Contents of the ZIP File (OOPC2024 Part C Baseline.zip)

### 1. Input.zip

ANNUALIZATION.SAS  
BASEID\_PLAN\_YEAR.SAS  
CATEGORY.XPT  
CLEANUP.SAS  
CONVERT.SAS  
COST\_SHARING\_AMBULANCE.SAS  
COST\_SHARING\_ASC.SAS  
COST\_SHARING\_CARDIAC\_REHAB.SAS  
COST\_SHARING\_CHIROPRACTIC.SAS  
COST\_SHARING\_COMP\_XRAY.SAS  
COST\_SHARING\_COMPREHENSIVE\_DENTAL.SAS  
COST\_SHARING\_DIAG.SAS  
COST\_SHARING\_DIALYSIS.SAS  
COST\_SHARING\_DME.SAS  
COST\_SHARING\_EDUCATION\_DIABETES.SAS  
COST\_SHARING\_ER.SAS  
COST\_SHARING\_EYEEXAMS.SAS  
COST\_SHARING\_HEARINGEXAMS.SAS  
COST\_SHARING\_HHA.SAS  
COST\_SHARING\_INPATIENT\_ACUTE.SAS  
COST\_SHARING\_INPATIENT\_PSYCH.SAS  
COST\_SHARING\_LAB.SAS  
COST\_SHARING\_MEDICARE\_BDRUGS\_INSULIN.SAS  
COST\_SHARING\_MEDICARE\_DRUGS.SAS  
COST\_SHARING\_MEDICARE\_DRUGS\_CHEMO.SAS  
COST\_SHARING\_MNTLHLTH.SAS  
COST\_SHARING\_OPIOID.SAS  
COST\_SHARING\_ORTHOTICS.SAS  
COST\_SHARING\_OT.SAS  
COST\_SHARING\_OTHER.SAS  
COST\_SHARING\_OUTPAT.SAS  
COST\_SHARING\_PCP.SAS  
COST\_SHARING\_PODIATRY.SAS  
COST\_SHARING\_PREVENTIVE\_DENTAL.SAS  
COST\_SHARING\_PSYCH.SAS  
COST\_SHARING\_PT.SAS  
COST\_SHARING\_PULMONARY\_REHAB.SAS  
COST\_SHARING\_RADIATION.SAS  
COST\_SHARING\_SET\_PAD.SAS  
COST\_SHARING\_SNF.SAS  
COST\_SHARING\_SPECIALIST.SAS  
COST\_SHARING\_SUPPLIES.SAS

COST\_SHARING\_URGENT\_CARE.SAS  
COST\_SHARING\_XRAY.SAS  
FORMATS.XPT  
JSON\_IMPORT.SAS  
MISSING\_CELLS\_YEAR.SAS  
OOPCLIB\_PARTC.CPORT  
OOPCV1M.SAS  
PARTC\_AUTOMAP.TXT  
PBP\_IMPORT.SAS  
PBP\_IMPORT\_CMS.SAS  
PBPCATS.SAS  
PERSON.XPT  
PLAN\_CATNAME\_NEW.SAS  
PLAN\_DEDUCTIBLE.SAS  
SHORTEN.TXT  
UTILIZATION.XPT

**2. Programs.zip**

CIMPORT.SAS  
OOPCV1P.SAS

**3. Inputjson.zip**

JSON\_IMPORT\_PBP.SAS  
JSON\_IMPORT\_PBPB1.SAS  
JSON\_IMPORT\_PBPB1\_2.SAS  
JSON\_IMPORT\_PBPB2.SAS  
JSON\_IMPORT\_PBPB3.SAS  
JSON\_IMPORT\_PBPB4.SAS  
JSON\_IMPORT\_PBPB6.SAS  
JSON\_IMPORT\_PBPB7.SAS  
JSON\_IMPORT\_PBPB7\_2.SAS  
JSON\_IMPORT\_PBPB8.SAS  
JSON\_IMPORT\_PBPB9.SAS  
JSON\_IMPORT\_PBPB10.SAS  
JSON\_IMPORT\_PBPB11.SAS  
JSON\_IMPORT\_PBPB12.SAS  
JSON\_IMPORT\_PBPB14\_2.SAS  
JSON\_IMPORT\_PBPB15.SAS  
JSON\_IMPORT\_PBPB16.SAS  
JSON\_IMPORT\_PBPB17.SAS  
JSON\_IMPORT\_PBPB18.SAS  
JSON\_IMPORT\_PBPB20.SAS  
JSON\_IMPORT\_PBPD.SAS  
JSON\_IMPORT\_PBPD\_1.SAS

## Development of the Out-of-Pocket Cost (OOPC) Data

The OOPC Model was developed using the methodology summarized below. Medicare Advantage Organizations are encouraged to review the more comprehensive “Centers for Medicare & Medicaid Services CY 2024 Part C Baseline Out-of-Pocket Cost Model Methodology December 2023” document located at:

<https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovGenIn/OOPCResources.html>.

CMS used the events or incidents of health care usage reported by individuals from the Medicare Current Beneficiary Survey (MCBS). The reported use of health care is matched to the individual claims history to make sure Medicare covered services are included, as well as services not covered by Medicare.

For the CY 2024 Part C Baseline OOPC Model, two years (2019 and 2020) of MCBS data are combined to create statistically valid and reliable cost values. Combining the data for both years creates a nationally representative cohort of individuals with Medicare.

Individuals are excluded for certain reasons including if they did not participate in both Medicare Parts A & B for the full 12 months of the year or if they were in a long-term care facility for any part of the year. The focus is on individuals in Original Medicare so that both MCBS survey results and the Medicare claims data could be linked for the same period. Also excluded are certain categories of individuals whose claims are paid differently or for whom there is not a full complement of data.

Average monthly out-of-pocket costs are calculated for each health plan. CMS used historical Medicare claims data and survey data for non-Medicare-covered services to determine total health care utilization for each person with Medicare. Beneficiaries eligible for low-income subsidies and cost sharing are not included in the OOPC calculations. As appropriate, costs for the various service categories were inflated from 2019/2020 to the plan year using inflation factors provided by CMS/OACT. Beneficiary utilization claims were mapped into appropriate PBP-based categories using diagnosis, procedure, and revenue center code information. CMS then applied the data entered into the PBPs to compute the out-of-pocket costs based on benefits covered and co-payments/coinsurance for each health care service. The beneficiary level OOPC values are then aggregated to plan level using the individual MCBS sample weights in order to yield nationally representative data. Annual values are enrollment-adjusted to yield mean monthly costs.

CMS made the following basic assumptions related to the out-of-pocket cost estimates for Medicare Advantage Plans:

- Use CY 2024 Plan Benefit Packages to define the benefit structures incorporated into the calculation of out-of-pocket cost values.
- Use cost shares for in-network providers.

- Use minimum co-payments if stated as a minimum/maximum range.
- Use in-network deductibles and plan maximums, as applicable (please note that a combined in- and out-of-network deductible is used for plans without the in-network deductible).
- Optional Supplemental benefits are not included.
- Costs for select Mandatory Supplemental benefits are included, based on available MCBS data.

The services included in the out-of-pocket cost calculations for Medicare Advantage Plans are listed below.

- Ambulance Services
- Ambulatory Surgical Center (ASC) Services
- Cardiac and Pulmonary Rehabilitation Services
- Chiropractic Services
- Preventive Dental
- Comprehensive Dental\*
- Diabetes Self-Management Training
- Diabetic Supplies and Services
- Durable Medical Equipment (DME)
- Dialysis Services
- Emergency Services
- Eye Exams
- Hearing Exams
- Home Health Services
- Inpatient Hospital Acute Services\*
- Inpatient Hospital Psychiatric Services\*
- Medicare Part B Prescription Drugs
- Mental Health Specialty Services
- Occupational Therapy Services
- Opioid Treatment Program Services
- Other Health Care Professional Services
- Outpatient Diagnostic Procedures/Tests Services
- Outpatient Diagnostic Radiological Services
- Outpatient Hospital Services
- Outpatient Lab Services
- Outpatient Therapeutic Radiological Services
- Outpatient X-Ray Services
- Physician Specialist Services
- Podiatry Services
- Primary Care Physician Services
- Prosthetics/Medical Supplies
- Psychiatric Services

- Physical Therapy and Speech-Language Pathology Services
- Skilled Nursing Facility (SNF)\*
- Supervised Exercise Therapy (SET) for Symptomatic Peripheral Artery Disease (PAD) Services
- Urgently Needed Services
- Medicare Part B Insulin Drugs

An asterisk (\*) indicates that the calculation includes Medicare-covered services as well as supplemental services. Supplemental Services are defined as additional days and non-Medicare-covered stays for Inpatient Hospital Services (Acute and Psychiatric) and as additional days for SNF. Comprehensive dental includes Medicare-covered dental exam and supplemental dental.

Medicare Advantage plans offer a wide range of supplemental benefits, some of which were not included in the out-of-pocket costs calculations because MCBS claims data are insufficient or do not exist. Some examples of supplemental benefits not included in the out-of-pocket cost values for Medicare Advantage plans are:

- Worldwide Emergency/Urgent coverage outside the United States and its territories
- Transportation
- Acupuncture
- Hearing services not usually covered by Medicare
- Vision services not usually covered by Medicare
- Chiropractic services not usually covered by Medicare
- Podiatry services not usually covered by Medicare

## Troubleshooting

Below are several areas where users have encountered issues when running the model.

### Wrong or Missing Directory Locations

Make sure that all directories listed in the edited SAS programs correspond to the locations and names of the directories you have set up on your workstation. If an “input” directory is empty, the following type of error can show up in the SAS log while attempting to run the **CIMPORT.SAS** program.

**NOTE: Library IN does not exist.**

**ERROR: Library IN does not exist.**

**NOTE: Library OUTPUT does not exist.**

**ERROR: Physical file does not exist, c:\loopc\_c\input\person.xpt**



## Problems with Output Files

Each new SAS run should have a new unique output file name designated in the **OOPCVIP.SAS** program. If you do not change the name from a previously created Excel file, the new SAS run will overwrite the old file contents, or if the current Excel file is open, will not produce output at all. An example error message is shown below:

**ERROR: The MS Excel table OOPCS\_2024 has been opened for OUTPUT. This table already exists, or there is a name conflict with an existing object. This table will not be replaced. This engine does not support the REPLACE option.**  
**ERROR: Export unsuccessful. See SAS Log for details.**

Another message will be generated if you forget to create an output directory. For example,

**ERROR: Connect: 'c:\oopc\_c\output\OOPC\_RUN20240415.xlsx' is not a valid path. Make sure that the path name is spelled correctly and that you are connected to the server on which the file resides.**  
**ERROR: Error in the LIBNAME statement.**

Also, you may submit a run, find no “Error” messages in the **OOPCVIP.SAS** program, and yet find no Excel output file. One way this can happen is if the plan identifiers in the PLANLIST.TXT file are filled out without the final 3 segment identifiers, e.g.:

H9999001

## Problems with Insufficient Hard Drive Space

If you have been running the model repeatedly, you may encounter the following error message:

**WARNING: File 'WORK.xxxxxx.DATA' is shorter than expected. ERROR: The file WORK.xxxxxx.DATA is shorter than expected.**  
**ERROR: The file WORK.xxxxxx.DATA is shorter than expected. ERROR: The file WORK.xxxxxx.DATA is shorter than expected. WARNING: Data set WORK.yyyyyy was not replaced because this step was stopped.**  
**ERROR: The open failed because library member WORK.xxxxxx.DATA is damaged.**  
**ERROR: The open failed because library member WORK.xxxxxx.DATA is damaged.**  
**ERROR: The open failed because library member WORK.xxxxxx.DATA is damaged.**

This problem means that SAS does not have sufficient hard disk space for its temporary files. You can reboot your machine so that more memory is available to SAS. Also, check that you do not have 'leftover' SAS temporary directories. An example of SAS temporary directories that may remain from other sessions under 'My Computer' is:

c:\Documents and Settings\yourname\Local Settings\Temp\SAS Temporary Files\  
with subdirectories such as:  
TD\_XXXXX  
SAS\_util000100000150\_machinename

### Part C Output Expected, but Blank

When you have completed your PBP data entry, make sure you have exit/validated from the program. In one case, the Part C output for a plan appeared as a series of zeroes because Plan Level Cost Sharing section of the PBP had not been completed.

### No Part C Output

If your planfile contract/plan list and jsonfile contract/plan list do not match the following message appears in SAS log and the Part C output will not be created.

**NOTE: Invalid third argument to function SUBSTR at line 15096 column 11.  
START=OTHER FMTNAME=\$CONTPLNF LABEL=NO HLO=O  
HPLAN=OTHER \_ERROR\_=1 \_N\_=1**

### Testing

Before starting a run of the **OOPCV1P.SAS** program, it may be worth running a test on one plan to check that the data and directory locations have been set up correctly. As stated in Step 1 of the instructions, the selection of plans can be modified in the **PLANFILE.TXT** file.