MCBS
Medicare Current Beneficiary Survey

2020 | DATA USER'S GUIDE: COVID-19 FALL SUPPLEMENT PUBLIC USE FILE

Centers for Medicare & Medicaid Services (CMS)
Office of Enterprise Data and Analytics (OEDA)

Version Control Log

Date	Version	Revisions
1/6/2021	1.0	Initial version published.

TABLE OF CONTENTS

LIST OF EXHIBITS

ACRONYM LIST

AAPOR	American Association for Public Opinion Research
CAWI	Computer-Assisted Web Interviewing
CMS	Centers for Medicare & Medicaid Services
CSV	Comma-separated values file
COVIDF	LDS Survey File COVID-19 Fall Supplement Segment
DUA	Data Use Agreement
CPWFWGTS	COVID-19 PUF Fall Full Sample Weights
HHS	U.S. Department of Health and Human Services
IRB	Institutional Review Board
LDS	Limited Data Set(s)
MA	Medicare Advantage
MCBS	Medicare Current Beneficiary Survey
NORC	NORC at the University of Chicago
OMB	Office of Management and Budget
PHI	Protected Health Information
PII	Personally Identifiable Information
PSU	Primary Sampling Units
PUF	Public Use File
SAS	Statistical Analysis System
SSU	Secondary Sampling Units
USU	Ultimate Sampling Unit

1. INTRODUCTION

Over the past several years, the Centers for Medicare and Medicaid Services (CMS) has made it a priority to make more data available, including releasing to the public an unprecedented amount of information on services and procedures provided to Medicare beneficiaries. CMS provides users with multiple ways to access Medicare Current Beneficiary Survey (MCBS) data, and a wide array of documentation is publically available on the CMS MCBS website. MCBS data are made available via two annual Limited Data Set (LDS) releases and a MCBS Public Use File (MCBS PUF) based on the Survey File LDS. In response to the emergence of the novel (new) coronavirus in the United States in 2020, the MCBS has also released out-of-cycle topic-specific Public Use Files (MCBS COVID-19 Fall 2020 PUF).

On January 31, 2020, the Health and Human Services (HHS) Secretary determined that a Public Health Emergency (PHE) existed for the United States to aid the nation's healthcare community in responding to the novel "severe acute respiratory syndrome coronavirus 2" ("SARS-CoV-2") virus and the disease it causes, "coronavirus disease 2019" ("COVID-19"); on April 21, 2020, the Secretary renewed, effective April 26, 2020, the determination that a PHE still existed. Older people and people of all ages with severe chronic medical conditions — like heart disease, lung disease and diabetes, for example — seem to be at higher risk of developing serious COVID-19 illness.[1] With the emergence of the COVID-19 pandemic in the U.S., CMS was uniquely positioned to collect timely and vital information on how the pandemic was impacting the Medicare population by utilizing the MCBS.

CMS took advantage of the MCBS panel design to assess and understand the COVID-19 pandemic by planning a series of rapid response surveys as a supplement to the main MCBS. The first supplement was administered in Summer 2020 during the regular production cycle of Summer 2020 (Round 87) to existing MCBS sampled beneficiaries who were living in the community as a test of the COVID-19 rapid response protocol. After a successful Summer 2020 Community Supplement, CMS administered the COVID-19 Fall 2020 Supplement during the regular production cycle of Fall 2020 (Round 88); one questionnaire was administered to existing MCBS sampled beneficiaries who were living in the community and another, for the first time, to facility staff (i.e., Facility respondents) about beneficiaries living in a facility. CMS will continue asking these questions into 2021 as necessitated by the progression of the pandemic.

Data collected for MCBS sampled beneficiaries living in the community using the MCBS COVID-19 Summer 2020 Rapid Response Supplement and MCBS COVID-19 Fall 2020 Rapid Response Supplement will be made available as individual standalone COVID-19 PUFs and as part of the 2019 Survey File LDS. The release of data collected via a MCBS COVID-19 Winter 2021 Rapid Response Supplement or any future COVID-19 Supplements will be determined at a later date. Exhibit 1.1.1. shows the anticipated schedule of COVID-19 Supplements and PUF data releases known to date. Data collected for MCBS sampled beneficiaries living in a facility using the MCBS COVID-19 Fall 2020 Rapid Response Supplement will be released in the 2020 Survey File LDS. Due to disclosure concerns, data collected for MCBS sampled beneficiaries living in a facility using the MCBS COVID-19 Fall 2020 Rapid Response Supplement will not be released as a PUF.

[1] Garg S, Kim L, Whitaker M, et al. Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019 — COVID-NET, 14 States, March 1–30, 2020. MMWR Morb Mortal Wkly Rep 2020; 69:458–464. DOI: http://dx.doi.org/10.15585/mmwr.mm6915e3.

Exhibit 1.1.1 Anticipated Schedule of COVID-19 Supplements for Beneficiaries Living in the Community

Planned COVID-19 Supplements	Date of Survey Administration	Planned LDS File Release	Release Date of LDS File	Planned Public Use File Release	Release Date of Public Use File
COVID-19 Summer 2020 Community Supplement	June – July 2020	2019 Survey File COVIDS Segment	Summer 2021	COVID-19 Summer 2020 PUF	Released 10/16/20
COVID-19 Fall 2020 Community Supplement	October-November 2020	2019 Survey File COVIDF Segment	Summer 2021	COVID-19 Fall 2020 PUF	January 2021
COVID-19 Winter 2021 Community Supplement	March- April 2021 (anticipated)	2020 Survey File COVIDW Segment	Summer 2022	COVID-19 Winter 2020 PUF	3rd Quarter 2021

The content of the MCBS COVID-19 Fall 2020 PUF is governed by the central focus of the MCBS: to serve as a unique source of information on beneficiaries' health and well-being that cannot be obtained through CMS administrative sources alone. Disclosure protections have been applied to the file, including de-identification and other methods. As a result, the MCBS COVID-19 Fall 2020 PUF does not require a Data Use Agreement (DUA). In contrast, the MCBS LDS releases contain beneficiary-level protected health information (PHI) and therefore require a DUA. The MCBS COVID-19 Fall 2020 PUF is not intended to replace the more detailed LDS files; rather, it makes available a general-use publically-available alternative that provides the highest degree of protection to the Medicare beneficiaries' PHI.

The main benefits of the MCBS COVID-19 Fall 2020 PUF are:

1. Increased data access for researchers of the MCBS through a free file download that is consistent with other HHS public-use survey files;
2. Increased policy-relevant analyses, by attracting new researchers and policy-makers, for whom the cost and time associated with accessing the MCBS LDS can pose significant deterrents to use;
3. Access for researchers to policy-relevant and time-sensitive data during the ongoing pandemic.

This user guide contains information about the MCBS COVID-19 Fall 2020 PUF. It contains detailed information about the MCBS, COVID-19 Supplement, and specific background information to help data users understand and analyze the MCBS COVID-19 Fall 2020 PUF. A new data user's guide will be released for each future COVID-19 PUF listed in Exhibit 1.1.1.

Readers interested in analyzing the MCBS COVID-19 Fall 2020 PUF should also reference the COVID-19 Fall 2020 Supplement questionnaire specifications at: https://www.cms.gov/research-statistics-data-and-systemsresearchmcbsquestionnaires/2020-fall-supplemental-covid-19-questionnaires.

For more information about the survey design and data collection methods of the COVID-19 Fall Supplement and the main MCBS survey, readers should reference the forthcoming *2019 Data User's Guide: Survey File* and *2019 MCBS Methodology Report* (to be released in 2021 with the 2019 Survey File LDS). For general information about the MCBS, researchers can refer to the *2018 Data User's Guide: Survey File* (currently available on the CMS website) and *2018 Methodology Report*. Data users can access these documents along with other data documentation at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks. Data users interested in a collection of charts and tables presenting estimates from the LDS releases can access the *MCBS Chartbook* at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Tables.

For questions or suggestions on this document or other MCBS data-related questions, please email MCBS@cms.hhs.gov.

2. WHAT'S NEW FOR THE COVID-19 FALL 2020 COMMUNITY SUPPLEMENT?

Below are the highlights and updates for the Fall 2020 Community Supplement as compared to the Summer 2020 Community Supplement.

2.1 Technical and Programming Information

Comparison to the LDS: A new health Medicare Advantage (MA) indicator was added to the MCBS COVID-19 Fall 2020 PUF indicating whether a beneficiary was enrolled for the full year of 2019, partial year, or none of the year.

2.2 Questionnaires

Questionnaire content changes: There were a number of questionnaire changes for Fall 2020. Note that variable names referenced below are the questionnaire variable names. Data users can view the questionnaire for each supplement along with the questionnaire variable names referenced below and question text on the MCBS website at https://www.cms.gov/research-statistics-data-and-systemsresearchmcbsquestionnaires/2020-fall-supplemental-covid-19-questionnaires.

2.2.1 General

- The reference period throughout the survey was updated from "Since the beginning of the Coronavirus outbreak…" to "Since July 1, 2020…".
- All references to the "coronavirus outbreak" were updated to "coronavirus pandemic" to align with other federal surveys.

2.2.2 Section-Specific Changes

Availability and Use of Telemedicine: Two new questions were added to the telemedicine series, TELMEDUS and TELMEDT4, to collect information about the beneficiary's use of telemedicine services and the availability of telemedicine services.

Autoimmune Disease Prevalence: The two measures on autoimmune disease prevalence, AUTOIMRX and AUTOCND, were updated to align with other federal surveys. The variable names were updated to reflect this change.

COVID-19 Symptoms and Diagnosis: A series of items assessing the incidence of COVID-19 symptoms, such as fever, chills, and loss of taste, was removed to reflect changes in the course of the pandemic since Summer 2020, such as the wider availability of COVID-19 testing. The variables removed include DESC_SYM and SYMPTOM1-SYMPTOM3. An item asking if anyone in the household had symptoms (SYMPTSHH) was also removed.

Access to and Utilization of COVID-19 Testing: Two items pertaining to lack of access to COVID-19 tests, WANTTEST and REFUSTST, were removed to reflect changes in the course of the pandemic since Summer 2020, including the increased availability of COVID-19 testing.

The COVID-19 testing series was also revised to allow for the collection of information on utilization of viral and antibody tests separately. Questions COVIDTST and RESULTS were removed and replaced with COVSWAB and SWABRSLT (viral test) and ANTBDTST and ANTRESLT (antibody test).

Finally, two new concepts were added to the COVID-19 testing series. Two items were added to collect the wait time for results of each type of test (SWABWAIT and ANTWAIT). Two items were also added to collect the out-of-pocket amount paid by the beneficiary for each type of test (CVTSTPAY and ANTPAY).

COVID-19 Care: The Fall 2020 Community Supplement contained revisions to three items administered to respondents who previously reported a coronavirus diagnosis. An item measuring severity of coronavirus symptoms was added to align with other federal surveys (CVDSVRE). CVDTREAT, asking "Have you been treated for coronavirus or COVID-19?", was replaced with CVDSEEK "Did you seek medical care for coronavirus or COVID-19?" to align with other federal surveys. A new item was also added to measure persistent health effects of the virus (CVEFFECT).

Preventive Measures: The Supplement contains a series of items asking about preventive measures the beneficiary has taken in response to the outbreak of the coronavirus. The preventive measure "avoided gathering with groups of 10 or more people" (PREVGATH) was removed and replaced with "avoided large groups of people" (PREVGRP) to align with updated public health messaging.

Knowledge and Perceptions of COVID-19: A new series was added to measure perceptions of the coronavirus. Beneficiaries were asked to rate their agreement with a series of statements using a five-point agreement scale. The statements were:

- Coronavirus is more contagious than the flu (CONTAG);
- Coronavirus is more deadly than the flu (DEADLY); and
- It is important for everyone to take precautions to prevent the spread of the Coronavirus, even if they are not in a high-risk group (e.g., elderly, chronically ill) (TAKECAUT).

COVID-19 Vaccination: Working with the Centers for Disease Control and Prevention (CDC), two series of questions about a COVID-19 vaccine were added to the Fall 2020 Community Supplement specifications. A series on vaccine utilization (CVDVAC, VACNUM, VACDAT1, VACDAT2, NOVACRSN) was added to the specifications in the event that a COVID-19 vaccine was made available before the survey was fielded. However, as a vaccine was not available prior to the start of fielding in early October 2020, these items were not asked in Fall 2020. The vaccine utilization items will instead be administered beginning with the COVID-19 Winter 2021 MCBS Supplement since a COVID-19 vaccine became available in December 2020.An alternative series was also added to measure presumptive vaccine uptake (GETVAC and NOGETVAC) in lieu of a publically available COVID-19 vaccine. These items were asked in Fall 2020.

Ability to Access Basic Needs During the Pandemic: The Supplement included a series of items assessing the ability to access basic needs during the pandemic. An additional item was added to this series in Fall 2020 asking about access to face masks (DISRMASK).

3. OVERVIEW OF THE MCBS

3.1 Overview of the MCBS

Medicare is the nation's health insurance program for persons 65 years and over and for persons younger than 65 years who have a qualifying disability. The MCBS is sponsored by CMS and contains data provided by a representative national sample of the Medicare population. The MCBS is designed to aid CMS in administering, monitoring, and evaluating the Medicare program. A leading source of information on Medicare and its impact on beneficiaries, the MCBS provides important information on beneficiaries that is not otherwise collected through operational or administrative data on the Medicare program and plays an essential role in the monitoring and evaluation of beneficiary health status and health care policy.

The MCBS is a continuous, in-person, multi-purpose longitudinal survey representing the population of beneficiaries aged 65 and over and beneficiaries aged 64 and below with certain disabling conditions, residing in the United States. Fieldwork for the first round of data collection began in September 1991; since then, the MCBS has continued to collect and provide essential data on the costs, use, and health care status of Medicare beneficiaries. The MCBS has conducted continuous data collection for over 25 years, completing more than one million interviews provided by thousands of respondents.

The MCBS primarily focuses on economic and beneficiary topics including health care use and health care access barriers, health care expenditures, and factors that affect health care utilization. As a part of this focus, the MCBS collects a variety of information about the beneficiary, including demographic characteristics, health status and functioning, access to care, insurance coverage and out of pocket expenses, financial resources, and potential family support. The MCBS collects this information in three data collection periods, or rounds, per year. Over the years, data from the MCBS have been used to inform many advancements to the Medicare program, including the creation of new benefits such as Medicare's Part D prescription drug benefit.

3.2 Overview of the MCBS COVID-19 Fall 2020 Rapid Response Community Supplement

With the emergence of COVID-19 in the U.S., CMS was uniquely positioned to quickly collect vital information on how the pandemic is impacting the Medicare population by using the MCBS as a vehicle to collect data. Medicare beneficiaries, by definition, are most at risk for underlying conditions that may lead to more severe COVID-19 illness or complications. The MCBS has a sample size sufficient for precise estimation and power for tests of differences nationally and thus provides a ready source to obtain high quality data on the impact of the pandemic on the most vulnerable.

CMS conducted the MCBS COVID-19 Fall 2020 Rapid Response Community Supplement (referred to as the COVID-19 Fall 2020 Community Supplement) in October and November 2020 by telephone with existing MCBS sample members living in the community. The 15-minute survey collected data on the impact of COVID-19 on the lives of Medicare beneficiaries, including topics such as the availability of telemedicine visits, deferred medical care, social distancing and other preventive health behaviors, COVID-19 testing, and the consequences for social, emotional, and financial well-being. The MCBS COVID-19 Fall 2020 PUF combines data from this Supplement with demographic and health status data collected from MCBS respondents during prior interviews.

4. TECHNICAL AND PROGRAMMING INFORMATION

4.1 General Information

The MCBS COVID-19 Fall 2020 PUF includes data for 9,686 sampled beneficiaries who were interviewed for the MCBS in 2019 and interviewed for the COVID-19 Community Supplement in Fall 2020. The MCBS COVID-19 Fall 2020 PUF includes preliminary survey weights that allow for analyses that are nationally representative of the population of beneficiaries that was ever enrolled in Medicare at any point in 2019 and continued to be enrolled through Fall 2020. See Section 8.1 for further details on construction of the preliminary weights.

All records begin with a COVID_ID, a unique number for each beneficiary in the MCBS COVID-19 Fall 2020 PUF. This COVID_ID serves to identify records in the MCBS COVID-19 Fall 2020 PUF only and cannot be used for linking to MCBS data files other than the COVID-19 PUF. Each beneficiary's COVID_ID is randomly generated for each COVID-19 PUF release, so it is not possible to link a beneficiary's data between years, and the value of the COVID_ID does not provide any information about the beneficiary.

All variables in the MCBS COVID-19 Fall 2020 PUF are in numeric or integer formats. Formats and values for each variable are available in the MCBS COVID-19 Fall 2020 PUF codebook.

Variable groups contain prefixes to help users identify these groups by topic area. Each variable's prefix in the MCBS COVID-19 Fall 2020 PUF ends with "V" to distinguish the variables from the main MCBS PUF variables. Exhibit 4.1.1 includes information about these variable topic groupings and prefixes.

Exhibit 4.1.1: MCBS COVID-19 Fall 2020 PUF Segment Variable Prefixes, Number of Variables, Descriptions, and Related LDS Survey File Segments

MCBS COVID-19 PUF Variable Prefix	Description	Number of COVID-19 PUF Variables in Grouping
INV_	Interview characteristics	3
DMV_	Demographic information	10
ACV_	Access to care during the pandemic	124
XCV_	Personal experiences with COVID-19	42
PKV_	Preventive measures and knowledge about COVID-19	43
EMV_	Economic and mental effects of the pandemic	10
HLV_	Non-COVID-19 health status	24

4.2 Data File Information

Detailed information about variables in the MCBS COVID-19 Fall 2020 PUF can be found in the MCBS COVID-19 Fall 2020 PUF codebook. The codebook includes SAS variable names and labels, a note indicating which beneficiaries were eligible for the question, the question number corresponding to the survey item, and response option labels and frequencies. Certain variables in the PUF were recoded due to disclosure concerns so the categories in the PUF codebook may differ from the categories in the questionnaire specifications (e.g., the age categories for variable DMV_AGECAT reflect such recoding). Other variables were created by combining two variables, and their variable name indicates a recoded variable (e.g., HLV_OCALZDEM).

For each variable, the formats and format values are included in the codebook:

- Values of .R indicate "refused" and .D indicate "don't know."

- All values of "inapplicable" have been combined with missing values.
- Unweighted frequencies of most variables included in the MCBS PUF are provided in the accompanying codebook file.

The MCBS COVID-19 Fall 2020 PUF dataset is saved as a SAS export file. Directions and sample SAS code are given below and also in Appendix B to help users read the dataset into SAS.

Assume the MCBS COVID-19 Fall 2020 PUF export file (e.g. COVIDPUF_1_2020F.xpt) is downloaded into the folder "C:\MCBS\DOWNLOAD". The following SAS code can then be used to import the COVID-19 PUF segment into SAS:

```
LIBNAME PUFLIB "C:\MCBS\SASDATA";
FILENAME F "C:\MCBS\DOWNLOAD\COVIDPUF_1_2020F.XPT";
PROC IMPORT LIBRARY=PUFLIB INFILE=F;
RUN;
```

Additionally, a comma-separated values (CSV) file is available for use with other statistical software packages such as R® and STATA®.

A text file with SAS programming code to import the .xpt files, create formats, and apply SAS labels is provided for users.

4.3 Comparison to the LDS

The data collected from the COVID-19 Fall 2020 Community Supplement will be available to data users both in the MCBS COVID-19 Fall 2020 PUF and as part of the 2019 Survey File LDS files, which are available with a DUA.

The MCBS COVID-19 Fall 2020 PUF has been evaluated for disclosure risk to protect beneficiary confidentiality. The MCBS COVID-19 Fall 2020 PUF is a standalone file that cannot be linked to any other MCBS PUFs or LDS segments. In addition to the questions administered as part of the COVID-19 Fall 2020 Community Supplement, the MCBS COVID-19 Fall 2020 PUF includes select socio-demographic, chronic condition, and use of inhaled tobacco products variables sourced from the 2019 Survey File LDS files. These additional variables were collected during the Fall 2019 (Round 85) interview, if applicable. The majority of beneficiaries included in the MCBS COVID-19 Fall 2020 PUF completed a Fall 2019 (Round 85) interview; however, a small number did not complete a Fall 2019 (Round 85) interview and therefore do not have data for the Fall 2019 (Round 85) variables.

The 2019 Survey File LDS will also include the data collected by the COVID-19 Fall 2020 Community Supplement as a standalone LDS segment, COVIDF. Unlike the MCBS COVID-19 Fall 2020 PUF, the COVIDF segment will include the beneficiary identifier, BASEID, which allows researchers to link the segment to other LDS segments containing data from the 2019 data year that may be directly relevant to beneficiaries' experiences leading up to and during the pandemic. This includes information on health insurance coverage, health status during 2019, and experiences with care.

The MCBS COVID-19 Fall 2020 PUF is free and available for download on the CMS website. For users interested in the MCBS Survey File and Cost Supplement File LDS, more information on the LDS process can be found at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS.

Exhibit 4.3.2 compares socio-demographic variables and values available in the MCBS COVID-19 Fall 2020 PUF and the MCBS Survey File LDS. The MCBS Survey File LDS contains more detailed versions of the socio-

demographics in the MCBS COVID-19 Fall 2020 PUF as well as additional variables that do not have an equivalent in the MCBS PUF, noted below the exhibit.[2]

Exhibit 4.3.1: Comparison of Socio-demographic Variables and Values in the MCBS COVID-19 Fall 2020 PUF and MCBS Survey File LDS

Socio-demographic Characteristic	MCBS COVID-19 Fall 2020 PUF Variables and Values	MCBS Survey File LDS Variables and Values
Gender	DMV_SEX (Gender): Male; Female	ROSTSEX (Gender): Male; Female
Age	DMV_AGECAT (Age group): <65 years; 65-74 years; ≥75 years	D_STRAT (MCBS Sample age stratum): 0-44 years; 45-64 years; 65-69 years; 70-74 years; 75-79 years; 80-84 years; ≥85 years H_AGE (Age of beneficiary): Age of beneficiary in years
Income	DMV_INCOME (Income group of SP and Spouse): <$25,000; ≥$25,000	INCOME (Income range of SP and spouse): <$5,000; $5,000 - <$10,000; $10,000 - <$15,000; $15,000 - <$20,000; $20,000 - <$25,000; $25,000 - <$30,000; $30,000 - <$40,000; $40,000 - <$50,000; ≥$50,000 INCOME_H (SP and spouse total income last year): Range of values
Interview Language or Language Spoken at Home	INV_LANG (Language of interview): English; Spanish	INTLANG (Language of interview): English; Spanish WHATLANG (Language spoken at home): Spanish; French; German; Italian; Tagalog; Chinese; Polish; Korean; Greek; Filipino; Arabic; Portuguese; Other OTHRLANG (Language other than English spoken at home): Yes; No
Metro Status	DMV_CBSA (Metro status): Metro area; Non-metro area	H_CBSA (Type of CBSA as designated by CBSA): Metropolitan area-population of ≥50,000; Micropolitan area-population between 10,000 to 50,000; Non-CBSA

[2] The MCBS Survey File LDS contains additional socio-demographic information, including location of residence, rural-urban commuting area details, the number of living children the beneficiary has, employment status, status of SSA check, and English proficiency, which do not have corresponding variables available in the MCBS PUF. Please note that additional race/ethnicity variables from administrative sources are included in the MCBS Survey File LDS.

Socio-demographic Characteristic	MCBS COVID-19 Fall 2020 PUF Variables and Values	MCBS Survey File LDS Variables and Values
Race/Ethnicity	DMV_RACE (Race/ethnicity group): Non-Hispanic White; Non-Hispanic Black; Hispanic; Other	D_RACE2 (Race of SP): Asian; African American; Native Hawaiian or Pacific Islander; White; American Indian or Alaska Native; More than one RACEAS: Asian; RACEASAI: Asian Indian; RACEASCH: Chinese; RACEASFI: Filipino; RACEASJA: Japanese; RACEASKO: Korean; RACEASVI: Vietnamese; RACEASOT: Other Asian; RACEAA: Black or African-American; RACENH: Native Hawaiian or Pacific Islander; RACEPIHA: Native Hawaiian; RACEPIGU: Guamanian Chamorro; RACEPISA: Samoan; RACEPIOT: Other Pacific Islander; RACEWH: Caucasian; RACEAI: American Indian or Alaskan Native HISPORIG (Is SP of Hispanic or Latino origin?): Yes; No HISPORMA: Mexican/Mex American/Chicano; HISPORPR: Puerto Rican; HISPORCU: Cuban; HISPOROT: Other Hispanic/Latino/Spanish origin
Race/Ethnicity by Age Group	DMV_RE_AGE (Race/ethnicity age group): Non-Hispanic White, <65 years; Non-Hispanic White, 65-74 years; Non-Hispanic White, 75-84 years; Non-Hispanic White, 85+ years; Non-Hispanic Black, <65 years; Non-Hispanic Black, 65-74 years; Non-Hispanic Black, 75-84 years; Non-Hispanic Black, 85+ years; Hispanic, <65 years; Hispanic 65-74 years; Hispanic 75+ years; Other, <65 years; Other 65-74 years; Other 75+ years	Note: An MCBS Survey File LDS user could construct a similar race/ethnicity by age variable using D_RACE2, HISPORIG, and D_STRAT.
Medicare Advantage (MA)	DMV_MA_FLAG (Medicare Advantage flag for the year): No MA enrollment in 2019; Partial-year MA; Full-year MA	Note: An MCBS Survey File LDS user could construct a similar MA status variable using the monthly MA flags H_MAFF01 through H_MAFF12.

5. SURVEY OVERVIEW

5.1 Design of the MCBS COVID-19 Fall 2020 Community Supplement

Although participation in the main MCBS survey is limited to four years, data collection is continuous throughout the year with three distinct seasons (i.e., rounds) of data collection per year. In general, the three rounds are: winter (January through April); summer (May through August); and fall (September through December).

The COVID-19 Fall 2020 Community Supplement was an out-of-cycle, standalone survey administered as a supplement to the main MCBS survey design. The COVID-19 Fall 2020 Community Supplement was administered by telephone from October to November 2020 for existing MCBS sampled beneficiaries who had completed an MCBS interview from August 2019 through December 2019, making the sampled beneficiary eligible to be included in the 2019 Survey File.

Approximately 90 percent of the interviews for the main MCBS are administered for beneficiaries living in the community (i.e., not in a long-term care facility such as a nursing home); these interviews are called Community interviews. The remaining 10 percent of the interviews are called Facility interviews; they are administered to facility staff who respond on behalf of sampled beneficiaries living in a facility such as long-term care nursing homes or other institutions. The COVID-19 Fall 2020 Community Supplement was only administered for beneficiaries living in the community. If beneficiaries are unable to answer questions or require language assistance, they can enlist the help of an assistant, such as a family member, to help complete the interview; a proxy can also respond on behalf of the beneficiary if they are incapacitated or unable to complete the interview. The COVID-19 Fall PUF includes data for beneficiaries living in the community who were included in the COVID-19 Fall 2020 Community Supplement. A COVID-19 Fall 2020 Facility Supplement was also administered to facility staff on behalf of beneficiaries living in a facility. Due to disclosure concerns, those data will not be released as a PUF but will be available in the 2020 LDS files.

5.2 Sample Design

The MCBS uses a rotating panel sample design, covering the population of Medicare beneficiaries residing in the continental U.S. (48 states and the District of Columbia) for the survey year.[3] Each MCBS panel, an annual statistical sample of all Medicare enrollees, is interviewed up to three times per year over four consecutive years.[4] One panel is retired at the conclusion of each winter round, and a new panel is selected to replace it each fall round.

Beneficiaries for the MCBS are sampled from the Medicare Administrative enrollment data. The beneficiaries included in the MCBS LDS and COVID-19 PUF represent a randomly selected cross-section of all beneficiaries who were ever enrolled in either Part A or Part B of the Medicare program for any portion of 2019.[5]

The COVID-19 Fall 2020 Community Supplement was a cross-sectional survey conducted with existing MCBS sample members from the 2016, 2017, 2018, and 2019 panels. Exhibit 5.2.1 shows the distribution of each of

[3] Alaska and Hawaii are not included among the states from which the sample is selected due to the high cost of data collection in those areas; however, they are included in control totals for weighting purposes. Beginning in 2017, sampling from Puerto Rico was discontinued. Beginning in 2018, all data collection in Puerto Rico was discontinued.

[4] The three rounds per year are referred to seasonally. Respondents are interviewed in the winter round, the summer round, and the fall round each year.

[5] While beneficiaries included in the LDS releases represent both the ever enrolled and continuously enrolled Medicare population, the MCBS COVID-19 Summer 2020 PUF solely represents the population of beneficiaries who were ever enrolled in 2019 and were continuously enrolled through the time of the COVID-19 Summer 2020 Supplement.

the four panels included in the MCBS COVID-19 Fall 2020 PUF. Under the main MCBS sample design, the 2016 panel would have had their last interview in Winter 2020 (Round 86). However, in order to conduct the COVID-19 Fall 2020 Community Supplement with the 2019 Survey File population, the COVID-19 Supplement was administered to the 2016 panel in Fall 2020. Because the population for the COVID-19 Supplement includes existing MCBS sample members, all information in the preceding section on the MCBS sample design and source of the sample also applies to the COVID-19 Supplement.

For more information on the main MCBS sample design, please see the *Survey File Data User's Guide* at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks.

Exhibit 5.2.1: MCBS Composition of Panels in the MCBS COVID-19 Fall 2020 PUF

Data Year	Number of Beneficiaries Selected
2016	1,512
2017	2,195
2018	2,557
2019	3,422

5.3 Eligibility

To be eligible for the COVID-19 Fall 2020 Community Supplement, a beneficiary must have been continuously enrolled in Medicare from the beginning of 2020 and still be alive, living in the community, and eligible and enrolled in Medicare at the time of their COVID-19 Fall 2020 Community Supplement interview[6].

For more information on the main MCBS eligibility criteria, please see the *Survey File Data User's Guide* at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks.

5.4 Interviewing and Training Procedures

CMS contracts with NORC at the University of Chicago (NORC) to administer the MCBS. A national team of specially trained and certified NORC field interviewers conduct either face-to-face interviews with MCBS beneficiaries or their designated proxies or they conduct face-to-face interviews with Facility administrators on behalf of beneficiaries. Starting in March 2020, MCBS interviews were conducted by trained and certified NORC field interviewers by telephone in accordance with public health guidance during the COVID-19 pandemic.

The COVID-19 Fall 2020 Community Supplement was conducted by telephone from October to November, 2020. Fielding of the Supplement overlapped with the MCBS Fall 2020 (Round 88) data collection, which was conducted from August through December 2020.

For more information on the main MCBS data collection and training procedures, please see the *Survey File Data User's Guide* at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks.

[6] 538 cases were in the sample frame but were excluded from dialing because they did not complete a Winter 2020 Round 86, Summer 2020 R87, or Summer 2020 COVID-19 Community Supplement. Of these, 537 were considered nonrespondents, while one case became ineligible due to death or loss of entitlement.

5.4.1 Overview of Recruitment of Beneficiaries and Scheduling Procedures

An advance letter was sent to all eligible sample members informing them of the addition of the COVID-19 Supplement. Consistent with MCBS protocols, beneficiaries were able to use the help of an assistant or proxy when needed. A Spanish version of the COVID-19 Supplement was available and bilingual interviewers were available to conduct the COVID-19 Supplement in Spanish. The average administration time for the COVID-19 Supplement was 15 minutes.

5.4.2 Computer-Assisted Web Interviewing (CAWI)

Due to the COVID-19 pandemic, the COVID-19 Fall 2020 Community Supplement was conducted by telephone. The COVID-19 Fall 2020 Community Supplement was programmed using Voxco, a software platform well-suited for computer assisted web interviewing (CAWI) surveys. It was administered by trained field interviewers using the same interview equipment already in their possession for use on the MCBS – laptops, tablets, and telephone. Even though it was programmed for web administration, the questions were asked by trained interviewers using the telephone. Like the MCBS CAPI instrument loaded on a laptop, the CAWI instrument automatically guided the field interviewer through questions, recoded the answers, and contained logic and skip flows that increased the output of timely and high quality data.

5.4.3 Interviewer Training

All MCBS interviewers completed a remote training on topics specific to the COVID-19 Supplement prior to the start of COVID-19 Fall 2020 Community Supplement data collection.

5.4.4 Privacy and Data Security

Field interviewer training stresses the importance of maintaining respondent privacy, and project protocols are documented within the field interviewer manual. Field outreach and contacting procedures also maintain and ensure confidentiality. These procedures include the utilization of standard computer security protocol (dual authentication password protection for each interviewer laptop) and restrictions on submitting personally identifiable information (PII) through electronic mail. All MCBS survey staff directly involved in data collection and/or analysis activities are required to sign a Non-Disclosure Agreement and a confidentiality agreement.

NORC and CMS are committed to protecting respondent confidentiality and privacy, and both organizations diligently uphold provisions established under the Privacy Act of 1974, the NORC Institutional Review Board (IRB), the Office of Management and Budget (OMB), and the Federal Information Security Management Act of 2002. As stated in the MCBS OMB documentation, the information collected for MCBS is protected by NORC and by CMS. Respondent data are used only for research and statistical purposes. As required under the Privacy Act of 1974, identifiable information is not disclosed or released without the consent of the individual or the establishment, except to those involved in research (Public Law 93-579).

6. QUESTIONNAIRES

6.1 Overview

The COVID-19 Fall 2020 Community Supplement questionnaire consists of topics specific to the impact of the COVID-19 pandemic on Medicare beneficiaries' lives. Information from the 2019 MCBS was appended to the MCBS COVID-19 Fall 2020 PUF for use in analysis, including demographics, chronic conditions, and inhaled tobacco product use. The questions in the COVID-19 Supplement were adapted from a range of sources and intended to align with other federal surveys on similar topics. As discussed in Section 5.1., the COVID-19 Fall 2020 Community Supplement was only administered to beneficiaries living in the community at the time of the interview.

The topics measured by the COVID-19 Fall 2020 Community Supplement were:

- Availability and Use of Telemedicine
- Access to Computers and Internet
- Forgone Health Care as a Result of the Pandemic
- Autoimmune Disease Prevalence
- Utilization of COVID-19 Testing
- COVID-19 Care
- COVID-19 Vaccination
- Preventive Measures
- Sources of COVID-19 Information
- Knowledge and Perceptions of COVID-19
- Ability to Access Basic Needs During the Pandemic
- Impact to Financial and Mental Health

Below are descriptions of each topic area. See the CMS website for the questionnaire specifications for the COVID-19 Fall 2020 Community Supplement, here: https://www.cms.gov/research-statistics-data-and-systemsresearchmcbsquestionnaires/2020-fall-supplemental-covid-19-questionnaires

See Sections 6.2 and 6.3 within the Survey File Data User's Guide for information on the main MCBS questionnaires: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks.

Availability and Use of Telemedicine

During the COVID-19 pandemic, Medicare temporarily expanded coverage of telemedicine to help beneficiaries access a wider range of services from providers without having to travel to a healthcare office.[7] To measure the impacts of this change in policy, the COVID-19 Fall 2020 Community Supplement included questions on availability of telemedicine services before and during the pandemic and the utilization of telemedicine services

[7] "Medicare & Coronavirus" U.S. Centers for Medicare & Medicaid Services. Accessed on August 5, 2020. https://www.medicare.gov/medicare-coronavirus

during the pandemic. These questions were adapted from items on the National Center for Health Statistics (NCHS) COVID-19 Research and Development Survey (RANDS).[8]

Access to Computers and Internet

To inform research questions pertaining to access to telemedicine services, the COVID-19 Fall 2020 Community Supplement also contained a series of items on the use of computers, smartphones, tablets, videoconferencing, and access to the internet. These items were sourced from the Census Bureau's American Community Survey (ACS)[9] and November 2019 Current Population Survey (CPS) Computer and Internet Use Supplement.[10]

Forgone Health Care as a Result of the Pandemic

The COVID-19 Fall 2020 Community Supplement contained a series of items about medical care that was needed for something other than COVID-19 but was not obtained because of the pandemic. The Supplement asked if any care was forgone, what type of care it was, and for each type of care forgone, the Supplement asked whether it was the beneficiary or provider who made the decision to forgo care, and why the decision to forgo care was made. These items were adapted from the NCHS RANDS survey.

Autoimmune Disease Prevalence

Early findings show that certain preexisting medical conditions and autoimmune diseases make a person more vulnerable to contracting COVID-19.[11] The main MCBS questionnaire already collects information on prevalence of chronic conditions but does not ask about diagnosis of autoimmune diseases. Therefore, the COVID-19 Fall 2020 Community Supplement asked two questions about autoimmune diseases sourced from the NCHS RANDS survey.

Utilization of COVID-19 Testing

The COVID-19 Fall 2020 Community Supplement included two sets of items pertaining to the utilization of COVID-19 testing, one on the utilization of viral testing and one on the utilization of antibody testing. For each type of test, respondents were asked about utilization of testing, and, if a test was received, are asked about the result of the test, wait time for results, and portion of the cost that was paid out-of-pocket for the test. These items were also included as a part of the COVID-19 Fall 2020 Facility Supplement. These items were sourced from the NCHS RANDS survey and National Health Interview Survey (NHIS).[12]

---

[8] "COVID-19 Research and Development Survey (RANDS)" National Center for Health Statistics. 2020. https://www.cdc.gov/nchs/covid19/rands.htm

[9] "2020 American Community Survey" U.S. Census Bureau. Accessed May, 2020. https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2020/quest20.pdf

[10] "November 2019 Current Population Survey Computer and Internet Use Supplement" U.S. Census Bureau. Accessed May, 2020. https://www2.census.gov/programs-surveys/cps/techdocs/cpsnov19.pdf

[11] "Certain Medical Conditions and Risk for Severe COVID-19 Illness" U.S. Centers for Disease Control and Prevention. Last modified July 30, 2020. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fgroups-at-higher-risk.html

[12] "National Health Interview Survey" U.S. Centers for Disease Control and Prevention. https://www.cdc.gov/nchs/nhis/data-questionnaires-documentation.htm

COVID-19 Care

For those who had a probable or confirmed diagnosis of COVID-19, the Fall Supplement included items related to utilization of medical care and hospitalization for COVID-19, severity of coronavirus symptoms, and persistent health effects of the virus. These items were adapted from the NCHS RANDS survey.

COVID-19 Vaccination

Working with CDC, two series of questions about a COVID-19 vaccine were included in the Fall 2020 Community Supplement specifications. A series on vaccine utilization (CVDVAC, VACNUM, VACDAT1, VACDAT2, NOVACRSN) was included in the specifications in the event that a COVID-19 vaccine was made available before the survey was fielded. However, as a vaccine was not available prior to the start of fielding in early October 2020, these items were not asked in Fall 2020. The vaccine utilization items will instead be administered beginning with the COVID-19 Winter 2021 MCBS Supplement since a COVID-19 vaccine became available in December 2020.

An alternative series was also implemented to measure presumptive vaccine uptake (GETVAC and NOGETVAC) in lieu of a publically available COVID-19 vaccine. These items were asked in Fall 2020.

Preventive Measures

The COVID-19 Fall 2020 Community Supplement included items on which preventive measures were taken to avoid exposure to the virus. The survey asked about 16 different measures that were recommended by the CDC and public health community during the pandemic, including washing hands, coughing or sneezing into a tissue, avoiding large groups of people, wearing facemasks, and purchasing extra supplies such as food, cleaning supplies, and prescriptions. These items were adapted from the NCHS RANDS survey and other sources.[13]

Sources of COVID-19 Information

The COVID-19 Fall 2020 Community Supplement included items relating to the media or other types of sources the beneficiary relies on for information about the pandemic. These items were sourced from the March 2020 AP-NORC Center Poll.[14]

Knowledge and Perceptions of COVID-19

The COVID-19 Fall 2020 Community Supplement included a series measuring knowledge of public health messaging about the virus. The survey asked about knowledge of guidance related to frequent hand washing, healthy people wearing facemasks in public, avoiding gatherings with large numbers of people, sheltering in place, and seeking medical attention for trouble breathing. These items were sourced from the March 2020 AP-NORC Center Poll.

The Supplement also included a series on the perceived severity of the coronavirus—both generally and as compared to the flu. These items were sourced from the University of California Irvine's COVID-19 Outbreak Study.[15]

---

[13] "How to Protect Yourself & Others" U.S. Centers for Disease Control and Prevention. Accessed May, 2020. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html

[14] "March 2020 Poll AP-NORC Center Poll" The Associated Press-NORC Center for Public Affairs Research. Accessed May, 2020. https://apnorc.org/wp-content/uploads/2020/04/march2020_topline.pdf

[15] Roxane Cohen Silver and Alison Holman. "COVID-19 Outbreak Study". March-April 2020. University of California Irvine.

Ability to Access Basic Needs During the Pandemic

The COVID-19 Fall 2020 Community Supplement included a series of items measuring disruption to basic needs caused by the pandemic, including ability to pay rent or mortgage and access to medication, health care, food, household supplies, and face masks. These items were adapted from the NCHS RANDS survey.

Impact to Financial and Mental Health

The COVID-19 Fall 2020 Community Supplement included a series on impacts of the outbreak, including financial security, and feelings of stress or anxiety, loneliness or sadness, and social connection. These items were adapted from the NCHS RANDS survey.

6.2 Additional Variables Included in the MCBS COVID-19 Fall 2020 PUF

In addition to the content described in the prior section on items administered as part of the COVID-19 Fall 2020 Community Supplement, the MCBS COVID-19 Fall 2020 PUF also includes variables sourced from the 2019 Survey File LDS that were collected during the main MCBS Fall 2019 (Round 85) interview. These variables include socio-demographics, chronic conditions, and use of inhaled tobacco products.

More information about these segments can be found in the *2018 Data User's Guide: Survey File* (currently available on the CMS website) and the forthcoming *2019 Data User's Guide: Survey File* (to be released in summer 2021 with the 2019 Survey File LDS).

7. SAMPLING

7.1 Medicare Population Covered by the MCBS COVID-19 Fall 2020 PUF

The MCBS data releases are a reflection of enrolled Medicare beneficiaries residing in the continental United States. The sample for the MCBS is drawn from a subset of the Medicare enrollment data, which is a list of all Medicare beneficiaries. Residents of foreign countries and U.S. possessions and territories are excluded.

Beneficiaries were eligible for the COVID-19 Fall 2020 Community Supplement if they were continuously enrolled in Medicare from the beginning of 2020 and were alive, living in the community, and still eligible for and enrolled in Medicare at the time of their COVID-19 Fall Community Supplement interview.

Exhibits 7.1.1 and 7.1.2 present estimates of the size of the 2019 ever enrolled Medicare population still alive and enrolled and residing in the community during Fall 2020, by race and age (as of December 31, 2019) and by sex in the MCBS COVID-19 Fall 2020 PUF. Exhibit 7.1.3 presents the aggregated estimates of the size of the 2019 ever enrolled Medicare population still alive and enrolled and residing in the community during Fall 2020, overall and by sex and race.

Exhibit 7.1.1: Estimated Number of Male Community Medicare Beneficiaries by Race and Age, in the MCBS COVID-19 Fall 2020 PUF*

Race	Age as of 12/31/2019	Weighted Count
White non-Hispanic	Under 65 years	3,538,951
	65-74 years	9,417,593
	75+ years	5,835,202
Black non-Hispanic	Under 65 years	821,341
	65-74 years	1,055,649
	75+ years	435,514
Hispanic	Under 65 years	558,911
	65-74 years	911,788
	75+ years	552,985
Other†	Under 65 years	577,227
	65-74 years	766,052
	75+ years	465,988

SOURCE: MCBS COVID-19 Fall 2020 PUF, weighted counts.

*Weighted counts may not sum to the total of beneficiaries living in the community in the U.S. due to missingness.
†The 'Other' race category includes other races, more than one race, and unknown race.

Exhibit 7.1.2: Estimated Number of Female Community Medicare Beneficiaries by Race and Age, in the MCBS COVID-19 Fall 2020 PUF*

Race	Age as of 12/31/2019	Weighted Count
White non-Hispanic	Under 65 years	3,967,255
	65-74 years	11,134,114
	75+ years	7,966,103

Race	Age as of 12/31/2019	Weighted Count
Black non-Hispanic	Under 65 years	892,209
	65-74 years	1,339,678
	75+ years	828,676
Hispanic	Under 65 years	578,999
	65-74 years	1,200,050
	75+ years	826,505
Other†	Under 65 years	416,019
	65-74 years	686,959
	75+ years	553,702

SOURCE: MCBS COVID-19 Fall 2020 PUF, weighted counts.

*Weighted counts may not sum to the total of beneficiaries living in the community in the U.S. due to missingness.
†The 'Other' race category includes other races, more than one race, and unknown race.

Exhibit 7.1.3: Estimated Number of Community Medicare Beneficiaries by Sex and Race, in the MCBS COVID-19 Fall 2020 PUF*

Group	Subgroup	Weighted Count
Overall Total		55,327,472
Sex	Male Total	24,937,202
	Female Total	30,390,270
Race	White non-Hispanic Total	41,859,219
	Black non-Hispanic Total	5,373,067
	Hispanic Total	4,629,239
	Other Total†	3,465,947

SOURCE: MCBS COVID-19 Fall 2020 PUF, weighted counts.

*Weighted counts may not sum to the total of beneficiaries living in the community in the U.S. due to missingness.
†The 'Other' race category includes other races, more than one race, and unknown race.

7.2 Targeted Population and Sampling Strata

The targeted population for the MCBS consists of persons enrolled in one or both parts of the Medicare program, that is, Part A or Part B, as of December 31 of the sample-selection year, and whose address on the Medicare files is in one of the 48 contiguous states (excludes Alaska and Hawaii), the District of Columbia, or Puerto Rico. Since 2015, the MCBS has oversampled Hispanic beneficiaries residing in the continental U.S. Beginning in 2017, Puerto Rico was removed from the MCBS sample; thus, the MCBS sample was selected entirely from the continental U.S. and the District of Columbia beginning with the 2017 Panel.

The targeted population for the COVID-19 Fall 2020 Community Supplement was the same as the main MCBS.

For more information on the sampling strata, please see Section 6 of the *Survey File Data User's Guide*: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks.

7.3 Primary and Secondary Sampling Units

All of the panels in the MCBS data releases are distributed across the subset of 104 non-Puerto Rican PSUs from the redesigned sample of 107 PSUs selected in 2001.[16] These PSUs are a representative, national sample of beneficiaries who are geographically dispersed throughout metropolitan areas and groups of non-metropolitan counties. Recall that SSUs are census tracts or groups of contiguous tracts within the selected PSUs.

7.4 Sample Selection

The MCBS sampling design provides nearly self-weighting (i.e., equal probabilities of selection) samples of beneficiaries within each of the 14 sampling strata. Within the selected PSUs and SSUs, a systematic sampling scheme with random starts is employed for selecting beneficiaries.[17]

[16] An original set of 107 PSUs was selected at the start of the MCBS in 1991; the current PSUs were selected in 2001 with a focus on maximizing overlap with the original set of PSUs. With the rotating panel design, the PSU redesign is transparent to data users and no special processing is required. For more details on the PSU redesign, see Lo, A, A Chu, and R Apodaca. "Redesign of the Medicare Current Beneficiary Survey Sample," Proceedings of the Survey Research Section of the American Statistical Association 2002.

[17] The MCBS Incoming Panel was drawn by systematic random sampling with probability proportional to probabilities of selection with an independently selected random start within each PSU. For more information on this sampling method, please see the *MCBS Methodology Report*, available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks.

8. TECHNICAL NOTES ON USING THE DATA

8.1 Weights and Variance Estimation

The sample design of MCBS includes stratification, clustering, multiple stages of selection, and disproportionate sampling. Furthermore, the MCBS sampling weights reflect adjustments for survey nonresponse. These survey design and estimation complexities require special consideration when analyzing MCBS data (i.e., it is not appropriate to assume simple random sampling).

To obtain accurate estimates from MCBS data, for either descriptive statistics or more sophisticated analyses based on multivariate models, the survey design complexities need to be taken into account by applying MCBS weights to produce estimates and using an appropriate technique to derive standard errors associated with the weighted estimates. The MCBS COVID-19 Fall 2020 PUF includes preliminary full-sample cross-sectional weights derived from nonresponse-adjusted weights among the beneficiaries sampled for the COVID-19 Fall 2020 Community Supplement (CPWFWGT). These preliminary weights are intended for use in cross-sectional statistics. Each weight is greater than zero for all beneficiaries on the file. The weights should be used to make preliminary estimates of parameters for the Medicare population who were enrolled at any point in 2019 and still alive, enrolled, and living in the community in Fall 2020. Note these weights are considered preliminary because 2019 administrative data on beneficiary status and Medicare eligibility are not yet finalized. It is possible that these preliminary weights may include a small number of beneficiaries who will later be determined to have been ineligible. The final weights will be provided in the 2019 Survey File LDS.

To permit the calculation of random errors due to sampling, a series of replicate weights were computed for the MCBS COVID-19 Fall 2020 PUF. Unless the complex nature of the MCBS is taken into account, estimates of the variance of a survey statistic may be biased downward. The replicate weights included in the MCBS COVID-19 Fall 2020 PUF can be used to calculate standard errors of the sample-based estimates. These replicate cross-sectional weights are labeled CPWF001 through CPWF100 corresponding to the ever enrolled weight CPWFWGT.

Most commercial software packages today include techniques to accommodate the complex design, through replicate weight approaches. Among these are STATA®, SUDAAN®, R®, and the complex survey procedures in SAS®. When using the replicate weight approach to variance estimation, the variance estimation method of balanced repeated replication (BRR) using Fay's adjustment of 0.3 is recommended. Sample code in SAS, STATA, and R for estimating statistics can be found in Appendix B. Analysis of subgroups should utilize the domain functions within the statistical package of your choice (e.g., the DOMAIN statement in SAS, or the OVER function in STATA); restricting the sample to the subgroup and then performing an analysis would lead to slightly biased estimates of variance.

8.2 Item Non-Response

As in any other survey, some respondents could not, or would not, supply answers to some questions.[18] Item non-response rates are generally low in the MCBS data, but the analyst still needs to be aware of the missing data and be cautious about patterns of non-response.[19] The calculation of the study-wide response rates generally follows the guidelines specified by the American Association for Public Opinion Research (AAPOR)

[18] This is different from when an individual refuses to participate in the survey altogether, which is called unit non-response. Unit non-response is discussed in detail in the *MCBS Methodology Report*, Section 9.

[19] In the LDS files, item non-response types are indicated by missing type codes in SAS, including refusal to answer, don't know the answer, and invalid skip. The code .D represents a "don't know" response, the code .R represents a "refused" response, and .N represents an "invalid skip" response.

and OMB. For the population represented by the MCBS COVID-19 Fall 2020 PUF, the calculated overall response rate was 72.6 percent.

8.3 Subgroup Analysis

When analyzing survey data, researchers are often interested in focusing their analyses on specific subgroups of the full population sample (e.g., Medicare beneficiaries aged 65 and over, Hispanics, or females). A common pitfall when performing sub-group analysis of survey data when variance estimation methods such as Taylor-series are used is to delete or exclude observations not relevant to the subgroup of interest. Standard errors for MCBS estimates are most accurate when the analytic file includes all beneficiaries. However, when replicate weights are used for variance estimation, deleting observations not relevant to the subgroup of interest prior to analyzing the subgroup will still produce unbiased standard errors. Almost all statistical packages provide the capability to limit the analysis to a subgroup of the population.

The Taylor Series linearization method of variance estimation is not recommended for subgroup analysis with MCBS data because accidentally excluding any observation in the sample while conducting the subgroup analysis using this variance estimation method will result in biased standard error estimates. Variance estimation using the Taylor Series linearization method for subgroup analyses requires a "domain" or "subgroup" statement (available in most statistical packages) to account for estimated domain sizes (i.e., uncertainty in the denominator). The recommended method of variance estimation for subgroup analysis is the BRR method; which does not require any special subgroup considerations. The BRR method allows the analyst to subset data to a subgroup of interest and still produce unbiased standard error estimates.

8.4 Example Research Questions

Exhibit 8.4.1 presents example research questions that can be addressed by the MCBS COVID-19 Fall 2020 PUF. These research questions are intended to illustrate the types of analyses researchers can perform using the MCBS COVID-19 Fall 2020 PUF and are not meant to be a comprehensive list of possible research questions that can be answered with these data. Note that researchers who wish to conduct analyses including data from the MCBS COVID-19 Fall 2020 Community Supplement combined with data from the main MCBS (e.g., health insurance coverage, usual source of care information, mental health, and cost and utilization history) should refer to the MCBS Survey File LDS rather than the MCBS COVID-19 Fall 2020 PUF.

Exhibit 8.4.1: Example Research Questions That Can be Answered Using the MCBS COVID-19 Fall 2020 PUF

Topic	Example Research Questions
Pandemic Impact on Daily Life	Are there differences in the self-reported impact of the COVID-19 pandemic on Medicare beneficiaries' daily lives (e.g., ability to pay housing costs, get food) across socio-demographic characteristics?
Availability of and Use of Telemedicine Services	Among Medicare beneficiaries, are there differences in availability of telemedicine services by income (below or above $25,000)?
Preventive Health Behaviors	Are there differences in self-reported preventive health behaviors (e.g., washing hands, wearing face masks) by age group?
Health Behaviors or Social Determinants of Health	Are there differences in the percentage of Medicare beneficiaries who were tested for COVID-19 by use of inhaled tobacco products?
Health Status and Functioning	Were Medicare beneficiaries with particular chronic disease conditions more likely than others to suspect they had COVID-19?

Topic	Example Research Questions
COVID-19 Vaccination	Are there differences in likelihood of getting a COVID-19 vaccine (if one were available) by perceptions of COVID-19 severity (e.g., coronavirus is more deadly than the flu)?

8.5 Guidelines for Citation of Data Source

This document was produced, published, and disseminated at U.S. taxpayer expense. All material appearing in this document is in the public domain and may be reproduced or copied without permission; citation as to source, however, is appreciated.

Accordingly, CMS requests that data users cite CMS and the Medicare Current Beneficiary Survey as the data source in any publications or research based upon these data. Suggested citation formats are below.

Tables and Graphs: The suggested citation to appear at the bottom of all tables and graphs should read:

> SOURCE: Centers for Medicare & Medicaid Services, Medicare Current Beneficiary Survey, Medicare Current Beneficiary Survey, COVID-19 Fall Supplement Public Use File, 2020.

Bibliography: The suggested citation for the *MCBS Data User's Guide: COVID-19 Fall 2020 Supplement Public Use File* should read:

> SOURCE: Centers for Medicare & Medicaid Services. 2020 Medicare Current Beneficiary Survey Data User's Guide: COVID-19 Fall Supplement Public Use File. Retrieved from [ADD URL], 2020.

Survey Data: The suggested citation for the MCBS survey data files and other documentation should read:

> SOURCE: Centers for Medicare & Medicaid Services. Medicare Current Beneficiary Survey, COVID-19 Fall Supplement Public Use File. Baltimore, MD: U.S. Department of Health and Human Services, 2020.

9. REFERENCES

Holman, A, and Silver, R. "COVID-19 Outbreak Study." University of California Irvine. Accessed April 2020.

Lo, A, Chu A, and Apodaca, R. "Redesign of the Medicare Current Beneficiary Survey Sample." *Proceedings of the Survey Research Section of the American Statistical Association* (2002): 2139-44.

Garg S, Kim L, Whitaker M, et al. Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019 — COVID-NET, 14 States, March 1–30, 2020. MMWR Morb Mortal Wkly Rep 2020; 69:458–464. DOI: http://dx.doi.org/10.15585/mmwr.mm6915e3.

National Center for Health Statistics. "COVID-19 Research and Development Survey (RANDS)." 2020. https://www.cdc.gov/nchs/covid19/rands.htm.

The Associated Press-NORC Center for Public Affairs Research. "March 2020 Poll AP-NORC Center Poll." Accessed May, 2020. https://apnorc.org/wp-content/uploads/2020/04/march2020_topline.pdf.

U.S. Census Bureau. "2020 American Community Survey." Accessed May, 2020. https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2020/quest20.pdf.

U.S. Centers for Disease Control and Prevention. "Certain Medical Conditions and Risk for Severe COVID-19 Illness." Last modified July 30, 2020. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fgroups-at-higher-risk.html.

U.S. Centers for Disease Control and Prevention. "How to Protect Yourself & Others". Accessed May, 2020. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html

U.S. Centers for Disease Control and Prevention. "National Health Interview Survey". https://www.cdc.gov/nchs/nhis/data-questionnaires-documentation.htm

U.S. Centers for Disease Control and Prevention. "Telehealth Interventions to Improve Chronic Disease." Last modified May 11, 2020. https://www.cdc.gov/dhdsp/pubs/telehealth.htm.

U.S. Centers for Disease Control and Prevention. "What You Should Know About COVID-19 to Protect Yourself and Others." Last modified June 1, 2020. https://www.cdc.gov/coronavirus/2019-ncov/downloads/2019-ncov-factsheet.pdf.

U.S. Census Bureau. "November 2019 Current Population Survey Computer and Internet Use Supplement." Accessed May, 2020. https://www2.census.gov/programs-surveys/cps/techdocs/cpsnov19.pdf.

U.S. Centers for Medicare & Medicaid Services. "Medicare & Coronavirus." Accessed on August, 2020. https://www.medicare.gov/medicare-coronavirus.

APPENDICES

10. APPENDICES

Appendix A: Glossary

Beneficiary: Beneficiary refers to a person receiving Medicare services who may or not be participating in the MCBS. Beneficiary may also refer to an individual selected from the MCBS sample about whom the MCBS collects information. Beneficiaries must meet at least one of three criteria for Medicare eligibility (is aged 65 years or older, is under age 65 with certain disabilities, or is of any age with End-Stage Renal Disease) and is entitled to health insurance benefits. (Source: https://www.cms.gov/Medicare/Medicare-General-Information/MedicareGenInfo/index.html).

Community component: Survey administered for beneficiaries living in the community (i.e., not in a long-term care facility such as a nursing home) during the reference period covered by the MCBS interview. An interview may be conducted with the beneficiary or a proxy.

Continuously enrolled (aka always enrolled): A Medicare beneficiary who was enrolled in Medicare from the first day of the calendar year until the fall interview and did not die prior to the fall round. This population excludes beneficiaries who enrolled during the calendar year 2018, those who dis-enrolled or died prior to their fall interview, residents of foreign countries, and residents of U.S. possessions and territories other than Puerto Rico.

Coronavirus (COVID-19 or SARS-CoV-2): An illness caused by a new coronavirus that can spread person to person. Symptoms range from mild (or no symptoms) to severe illness.[20] The virus has been named "severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2) and the disease it causes has been named "coronavirus disease 2019" ("COVID-19").

COVID-19 Fall 2020 Community Supplement: A nationally representative, cross-sectional telephone survey of Medicare beneficiaries living in the community that was administered from October 2020 through November 2020.

COVID-19 Fall 2020 Facility Supplement: A nationally representative, cross-sectional telephone survey of Medicare beneficiaries living in a facility that was administered from October 2020 through December 2020.

Ever enrolled: A Medicare beneficiary who was enrolled at any time during the calendar year including people who dis-enrolled or died prior to their fall interview. Excluded from this population are residents of foreign countries and of U.S. possessions and territories other than Puerto Rico.

Facility component: Survey administered for beneficiaries living in facilities, such as long-term care nursing homes or other institutions, during the reference period covered by the MCBS interview. Interviewers conduct the Facility component with staff members located at the facility (i.e., facility respondents); beneficiaries are not interviewed if they reside at a facility.

Incoming Panel sample (formerly known as Supplemental Panel): A statistically sampled group of beneficiaries that enter the MCBS in the fall round of a data collection year. One panel is retired at the conclusion of each winter round, and a new panel is selected to replace it each fall round. Panels are identified by the data collection year (e.g., 2018 Panel) in which they were selected.

[20] "What you should know about COVID-19 to protect yourself and others." Centers for Disease Control and Prevention. Last modified June 1, 2020. https://www.cdc.gov/coronavirus/2019-ncov/downloads/2019-ncov-factsheet.pdf.

Long-term care facility: A facility that provides rehabilitative, restorative, and/or ongoing skilled nursing care to patients or residents in need of assistance with activities of daily living.

Medicare: Medicare is the federal health insurance program for people who are 65 or over, certain younger people with disabilities, and people with End-Stage Renal Disease (permanent kidney failure requiring dialysis or a transplant, sometimes called ESRD). The different parts of Medicare help cover specific services:

- Hospital Insurance (Part A): covers inpatient hospital stays, care in a skilled nursing facility, hospice care, and some home health care.
- Medical Insurance (Part B): covers certain doctors' services, outpatient care, medical supplies, and preventive services.
- Medicare Advantage (Part C): an alternative to coverage under traditional Medicare (Parts A and B), a health plan option similar to a Health Maintenance Organization (HMO) or Preferred Provider Organization (PPO) administered by private companies.
- Prescription Drug Coverage (Part D): additional, optional coverage for prescription drugs administered by private companies.

For more information, please visit the Medicare.gov website at https://www.medicare.gov/sign-up-change-plans/decide-how-to-get-medicare/whats-medicare/what-is-medicare.html.

Medicare Advantage (MA): Medicare Advantage Plans, sometimes called "Part C" or "MA Plans," are offered by private companies approved by Medicare. An MA provides, or arranges for the provision of, a comprehensive package of health care services to enrolled persons for a fixed capitation payment. The term "Medicare Advantage" includes all types of MAs that contract with Medicare, encompassing risk MAs, cost MAs, and health care prepayment plans (HCPPs).

Medicare beneficiary: See beneficiary.

Panel: See Incoming Panel sample.

Primary Sampling Unit (PSU): Primary sampling unit refers to sampling units that are selected in the first (primary) stage of a multi-stage sample ultimately aimed at selecting individual elements (Medicare beneficiaries in the case of MCBS). PSUs are made up of major geographic areas consisting of metropolitan areas or groups of rural counties.

Proxy: Beneficiaries who were too ill, or who could not complete the Community interview for other reasons, were asked to designate a proxy, someone very knowledgeable about the beneficiary's health and living habits. In most cases, the proxy was a close relative such as the spouse, a son or daughter. In a few cases, the proxy was a non-relative like a close friend or caregiver. In addition, a proxy was utilized if a beneficiary had been reported as deceased during the current round's reference period or if a beneficiary who was living in the community in the previous round had since entered into a long-term care facility. Proxy interviews are only used for the Community interview, as the Facility interview is conducted with a staff member located at the facility (see definition of "Facility component").

Race/ethnicity: Responses to race and ethnicity questions are self-reported by the respondent. Respondents who reported they were white and not of Hispanic origin were coded as white non-Hispanic; those who reported they were black/African-American and not of Hispanic origin were coded as black non-Hispanic; persons who reported they were Hispanic, Latino/Latina, or of Spanish origin, regardless of their race, were coded as Hispanic; persons who reported they were American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, or other race and not of Hispanic origin were coded as other race/ethnicity.

Respondent: The person who answers questions for the MCBS; this person can be the beneficiary, a proxy, or a staff member located at a facility where the beneficiary resides.

Round: The MCBS data collection period. There are three distinct rounds each year; winter (January through April); summer (May through August); and fall (September through December).

Secondary Sampling Unit (SSU): SSUs are made up of census tracts or groups of tracts within the selected PSUs.

Telemedicine: The use of remote clinical services, such as videoconferencing for consultations with health professionals.[21]

Ultimate Sampling Unit (USU): USUs are Medicare beneficiaries selected from within the selected SSUs.

[21] "Telehealth Interventions to Improve Chronic Disease." Centers for Disease Control and Prevention. Last modified May 11, 2020. https://www.cdc.gov/dhdsp/pubs/telehealth.htm.

Appendix B: Technical Appendix – Sample Code and Output

Please note that the code examples below use the MCBS COVID-19 Fall 2020 PUF preliminary weights, which begin with the prefix "CPW." You should use the preliminary MCBS COVID-19 Fall 2020 PUF weights only if you are using data from the COVID-19 PUF segment that has not been merged with data from any other segment. If you are analyzing data from the fall, winter, summer, or a combination of PUF segments, please see the discussion in Section 8.1 of this document about which weights should be used.

SAS Analysis Statements

Cross-tabulations

```
proc surveyfreq data=<Analytic dataset> VARMETHOD = brr (fay=.30);
        table <Var name>  / row  chisq lrchisq;
        weight CPWFWGT;
        repweight CPWF001 - CPWF100;
run;
```

Subgroup Analysis

```
proc surveyfreq data=<Analytic dataset> VARMETHOD = brr (fay=.30);
        table <Var name> *  <Subgroup variable> / row  chisq lrchisq;
        weight CPWFWGT;
        repweight CPWF001 - CPWF100;
run;
```

STATA Analysis Statements

Declare dataset as survey sample with replicate weights

```
svyset _n [pweight= CPWFWGT], brrweight(CPWF001 - CPWF100) fay(.3) vce(brr) singleunit(missing)
```

For categorical variables, use:

```
svy brr,  fay(.3) : tabulate <Var name> <Var name>
```

For subgroup analysis use:

```
svy brr, subpop(if <Subgroup>) fay(.3) : tabulate <Var name>, over(<Var name>)
```

R Analysis Statements

Declare MCBS survey design object with replicate weights

```
mcbs <- svrepdesign(
  weights = ~CPWFWGT,
  repweights = "CPWF[001-100]+",
  type = "Fay",
  rho = 0.3,
  data = <Source dataset>,
  combined.weights = TRUE
  )
```

For categorical variables, use:

```
svytable(~<Var name>,  design=mcbs)
```

For subgroup analysis use:

```
mcbs_subgrp <- subset(mcbs, <Subgroup criteria>)
svytable(~<Var name>,  design=mcbs_subgrp)
```