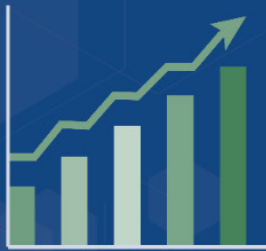


# 2021 | DATA USER'S GUIDE: SURVEY FILE



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

## Version Control Log

Date	Version	Revisions
06/14/2023	1.0	Initial version published.
03/08/2024	1.1	Added one Errata Note starting on page EN-1.

## ERRATA NOTES

This Errata Note provides corrections to known erroneous or missing information included in the *2021 Medicare Current Beneficiary Survey (MCBS) Data User's Guide: Survey File*.

### 2021 MCBS Cost Supplement File Segments and Contents Exhibit:

In the original release of the *2021 Survey File Data User's Guide*, a Home Health Events (HHE) segment was included in Exhibit 7.1.2: 2021 MCBS Cost Supplement File Segment and Contents which was not released with the final Cost Supplement File Limited Data Set (LDS). Additionally, the description of the Service Summary (SS) segment accounted for two summary records related to home health, whereas only one record was released in the final segment. The table below removes the HHE segment from the exhibit and revises the description for the SS segment to reflect the 14 segments released with the final 2021 Cost Supplement File LDS.

**Exhibit 7.1.2:** 2021 MCBS Cost Supplement File Segments and Contents

Cost Supp. Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
Dental Utilization Events (DUE)	Contains individual dental events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	DVH, US	All	All	One record per beneficiary per event (defined as a single visit to the dentist)
Facility Events (FAE)	Contains individual facility events reported during a Facility interview.	There is one record for each stay that occurred at least partly in the data year.	F	FI, AR	RH, US, EX	All	All	One record per beneficiary per stay in a long-term care facility
Hearing Utilization Events (HUE)	Contains individual hearing care events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	DVH, US	All	All	One record per beneficiary per event (defined as a single visit to a hearing care provider)

<b>Cost Supp. Segment (Abbrev)</b>	<b>Description</b>	<b>Data collection and special weights notes</b>	<b>Respondent Type*</b>	<b>Data Source **</b>	<b>Quex Section</b>	<b>Season</b>	<b>Panel ***</b>	<b>Unit of Observation</b>
Inpatient Hospital Events (IPE)	Contains individual inpatient hospital events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	IUQ, IPQ, ERQ, OPQ, US	All	All	One record per beneficiary per admission
Institutional Events (IUE)	Contains individual short-term facility (usually skilled nursing facility) stays reported during a Community interview or created from Medicare claims data.		B	CQ, AR	IUQ, IPQ, US	All	All	One record per beneficiary per admission
Medical Provider Events (MPE)	Contains individual events for a variety of medical services, equipment, and supplies reported during a Community interview or created from Medicare claims data.		B	CQ, AR	ERQ, IPQ, MPQ, OMQ, OPQ, US	All	All	One record per beneficiary per event (defined as a separate visit, procedure, service, or a supplied item for a survey-reported event)
Outpatient Hospital Events (OPE)	Contains individual outpatient hospital events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	OPQ	All	All	One record per beneficiary per event (defined as a single outpatient visit)
Prescribed Medicine Events (PME)	Contains individual outpatient prescribed medicine events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	PMQ, DVH, ERQ, IPQ, OPQ, MPQ	All	All	One record per beneficiary per prescribed medicine (defined as a single prescribed medicine)

Cost Supp. Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
Vision Utilization Events (VUE)	Contains individual vision care events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	DVH, US	All	All	One record per beneficiary per event (defined as a single visit to a vision care provider)
Person Summary (PS)	Summarization of utilization and expenditures by type of service and summarization of expenditures by payer, yielding one record per person.		B	CQ, FI, AR	all utilization including HHQ, US	All	All	One record per beneficiary
Service Summary (SS)	Summarization of the nine individual event files, along with one record for home health and one record for hospice utilization, yielding a total of 11 summary records per person.		B	CQ, FI, AR	all utilization including HHQ, US	All	All	11 records per beneficiary
CSEVWGTS	Contains cross-sectional full-sample and replicate weights representing the 2021 ever enrolled population.		B	CQ/FI	N/A	All	All	One record per beneficiary
CSL2WGTS CSL3WGTS	Contains longitudinal full-sample and replicate weights for the multi-year ever enrolled population. The CSL2WGTS file includes the two-year longitudinal weights for the population ever enrolled at any time during both 2020 and 2021. The CSL3WGTS file includes the three-year longitudinal weights for the population ever enrolled at any time during 2019, 2020, and 2021.		B	CQ/FI	N/A	All	All	One record per beneficiary

\* = Respondent type describes the expected setting where beneficiaries resided during the calendar year (i.e., C = respondent only completed Community interviews, F = a Facility interview was conducted, or B = respondents completed at least one Community interview and for whom at least one Facility interview was conducted). In each data year, some differences by segment will exist (i.e., data may reflect a prior or future calendar year due to the specific questionnaire and reference period used to collect the information).

\*\* = Data source describes the source of the data on the segment. The three possible sources are the Community Questionnaire (CQ), Facility Instrument (FI), and Administrative Records (AR). Each LDS segment can have any combination of these sources.

\*\*\* = Panel describes whether the questionnaire sections that provide the data for each segment are fielded for baseline respondents, continuing respondents, or both.

## OVERVIEW OF MCBS DOCUMENTATION

The Centers for Medicare & Medicaid Services (CMS) releases a comprehensive suite of documentation products to support researchers in using the Medicare Current Beneficiary Survey (MCBS). This section provides a concise summary of each documentation product.

- **Data User's Guides:** A Data User's Guide is produced for each MCBS Limited Data Set (LDS) and Public Use File (PUF) data release. There are three broad categories of Data User's Guides.
  - ▶ *Survey File Data User's Guide* (this document): Updated annually for each new data year, the *Survey File Data User's Guide* supports researchers in understanding and analyzing Survey File LDS data. This Data User's Guide contains detailed information about the Survey File LDS, including changes between years, important data user considerations, and sample code, as well as basic background information on the MCBS, including sampling, questionnaires, data collection, and data processing. Along with the *New User Tutorial* (see below), this Data User's Guide is the recommended starting point for researchers, particularly for those new to studying MCBS data.
  - ▶ *Cost Supplement File Data User's Guide*: Updated annually for each new data year, the *Cost Supplement File Data User's Guide* functions as a supplement to the corresponding *Survey File Data User's Guide* and supports researchers in understanding and analyzing Cost Supplement File LDS data. This Data User's Guide focuses on providing detailed information about the Cost Supplement File LDS, including changes between years, important data user considerations, and sample code.
  - ▶ *Public Use File Data User's Guides*: A Data User's Guide is also produced for each MCBS PUF release, including the annual Survey File PUF, the annual Cost Supplement File PUF, and the three COVID-19 Supplement PUFs. These Data User's Guides provide detailed, focused information to support researchers in understanding and analyzing PUF data.
- **Methodology Report:** Updated annually for each new data year, the *Methodology Report* provides detailed background information on the methods used to conduct the MCBS and process MCBS data. This includes information on sampling methodology, questionnaire development and programming, interviewer recruitment and training, data collection procedures, data processing and editing, including weighting and imputation, and response rates.
- **Data User Tutorials:**
  - ▶ *New User Tutorial*: Aimed at new data users who are unfamiliar with the MCBS, the *New User Tutorial* provides an overview of MCBS history, policy relevance, survey design, data products, and best practices for analysis. Along with the *Survey File Data User's Guide* (see above), the *New User Tutorial* is the recommended starting point for researchers.
  - ▶ *Advanced Topic-Based Tutorials*: In addition to the *New User Tutorial*, CMS has released a series of tutorials on more advanced topics, with the goal of supporting researchers in better understanding how to analyze and interpret MCBS data by providing detailed analytic guidance and examples. Topics of these tutorials include the differences between MCBS Community and Facility data, weighting and variance estimation, using data from the MCBS COVID-19 Supplements, and conducting longitudinal analysis and pooled cross-sectional analysis with MCBS data.

# TABLE OF CONTENTS

<b>Overview of MCBS Documentation.....</b>	<b>ii</b>
<b>ACRONYM LIST.....</b>	<b>x</b>
<b>1. INTRODUCTION .....</b>	<b>1</b>
1.1 Contents of the Data User's Guide: Survey File.....	2
<b>2. GENERAL GUIDELINES FOR DATA USE.....</b>	<b>4</b>
2.1 Data Access.....	4
2.2 Guidelines for Citation of Data Source .....	4
<b>3. WHAT'S NEW FOR DATA YEAR 2021?.....</b>	<b>6</b>
3.1 Sampling.....	6
3.2 Questionnaires.....	6
3.2.1 General.....	6
3.2.2 Section-Specific Changes.....	6
3.3 Data Collection .....	11
3.4 Documentation .....	11
3.5 Data Processing .....	11
<b>4. SURVEY OVERVIEW.....</b>	<b>19</b>
4.1 Design of MCBS .....	19
4.2 Sample Design.....	20
4.3 Case Types.....	21
4.3.1 Incoming and Continuing Cases .....	21
4.3.2 Community Interviews and Facility Interviews.....	21
4.4 Completed Interviews.....	22
<b>5. QUESTIONNAIRES.....</b>	<b>23</b>
5.1 Overview.....	23
5.1.1 Items from Validated Scales .....	23
5.2 Community Questionnaire.....	24
5.2.1 Baseline Interview .....	25
5.2.2 Continuing Interview.....	26
5.2.3 Core Questionnaire Sections .....	27



5.2.4 Topical Questionnaire Sections.....	35
5.2.5 Community Questionnaire Section Rotation within a Data Year.....	37
5.3 Facility Instrument .....	38
5.3.1 Facility Baseline Interview .....	39
5.3.2 Facility Continuing Interview.....	40
5.3.3 Facility Continuing Core Sections.....	42
5.3.4 Facility Topical Questionnaire Sections.....	45
<b>6. SAMPLING .....</b>	<b>46</b>
6.1 Medicare Population Covered by the 2021 MCBS Data .....	46
6.2 Targeted Population and Sampling Strata .....	50
6.2.1 Eligibility: Medicare Population Covered by the 2021 LDS.....	51
6.3 Three-Stage Cluster Design .....	51
6.4 Sample Selection .....	51
<b>7. DATA PRODUCTS &amp; DOCUMENTATION.....</b>	<b>53</b>
7.1 Contents of Data Release .....	53
7.1.1 2021 MCBS Survey File.....	54
7.1.2 2021 MCBS Cost Supplement File.....	62
7.1.3 Using the Data.....	66
7.1.4 Research Claims Files.....	66
7.2 Which File Do I Need? .....	66
7.2.1 Survey File Only.....	67
7.2.2 Using Both Survey File and Cost Supplement File .....	67
7.2.3 Using Both Community and Facility Data.....	67
<b>8. FILE STRUCTURE .....</b>	<b>69</b>
8.1 LDS Specifications.....	69
8.2 File Structure .....	69
Sort Order for Merging the Survey File LDS Segments.....	69
8.3 Claims Files .....	70
8.3.1 Utilization Detail Records.....	70
<b>9. DATA FILE DOCUMENTATION.....</b>	<b>71</b>
9.1 LDS Contents.....	71
9.2 LDS Components .....	71
9.2.1 Codebooks .....	71
9.2.2 Questionnaires.....	72
9.2.3 Data User Resources.....	72

9.3 Data Edits and Imputation .....	72
9.3.1 Data Edits .....	72
9.3.2 Imputation .....	73
9.4 Weighting.....	74
9.4.1 Preparing Statistics (Using the Full Sample Weights) .....	74
9.4.2 Special Topical Segment Weights .....	76
9.5 Using the Data.....	83
9.5.1 Merging Segments within 2021 .....	83
9.6 Variance Estimation (Using the Replicate Weights) .....	83
9.6.1 Variables Available for Variance Estimation .....	83
9.6.2 Variance Estimation for Analyses of Single Year of MCBS .....	84
9.6.3 Subgroup Analysis.....	84
9.7 Combining Multiple Years of Data.....	84
9.7.1 Longitudinal Analysis.....	84
9.7.2 Repeated Cross-Sectional or Pooled Analysis.....	85
<b>10. DATA FILE NOTES.....</b>	<b>88</b>
10.1 Global Information .....	88
10.1.1 BASEID .....	88
10.1.2 Missing Values .....	88
10.1.3 Derived and Administrative Variables.....	88
10.1.4 Initial Interview Variables .....	88
10.1.5 Ever Variables.....	89
10.1.6 Data Editing.....	89
10.1.7 Other Specify Questions .....	89
10.1.8 Interview Mode Indicator.....	90
10.1.9 Consistency with Medicare Program Statistics.....	90
10.1.10 Do Administrative Data Override Survey-Reported Data?.....	90
10.2 Survey File Segment Information.....	90
10.3 Survey File Segment Descriptions .....	91
10.3.1 Access to Care (ACCESSCR).....	91
10.3.2 Access to Care, Medical Appointments (ACCSSMED) .....	91
10.3.3 Administrative Utilization Summary (ADMNUTLS) .....	92
10.3.4 Assistance (ASSIST) .....	98
10.3.5 Chronic Conditions (CHRNCOND) .....	99
10.3.6 Chronic Condition Flags (CHRNCDL).....	100
10.3.7 Chronic Pain (CHRNPAIN) .....	101
10.3.8 Cognitive Measures (COGNFUNC).....	101
10.3.9 Community COVID-19 Vaccine Dosage (COMMDOSE).....	102

10.3.10 COVID-19 Experiences (COVIDEXP).....	102
10.3.11 Demographics (DEMO) .....	103
10.3.12 Diabetes (DIABETES).....	108
10.3.13 Facility Assessments (FACASMNT) .....	109
10.3.14 Facility Characteristics (FACCHAR).....	113
10.3.15 Falls (FALLS).....	114
10.3.16 Food Insecurity (FOODINS).....	114
10.3.17 General Health (GENHLTH) .....	114
10.3.18 Health Insurance Summary (HISUMRY) .....	115
10.3.19 Health Insurance Timeline (HITLINE).....	119
10.3.20 Household Characteristics (HHCHAR).....	121
10.3.21 Income and Assets (INCASSET).....	123
10.3.22 Interview Characteristics (INTERV).....	124
10.3.23 Medicare Advantage Plan Questions (MAPLANQX) .....	124
10.3.24 Medicare Plan Beneficiary Knowledge (MCREPLNQ) .....	125
10.3.25 Minimum Data Set (MDS3).....	126
10.3.26 Mental Health (MENTHLTH) .....	126
10.3.27 Mobility (MOBILITY) .....	127
10.3.28 Multiple Year Enrollment (MYENROLL) .....	127
10.3.29 Nagi Disability (NAGIDIS) .....	127
10.3.30 Nicotine and Alcohol (NICOALCO).....	129
10.3.31 Outcome and Assessment Information (OASIS).....	130
10.3.32 Patient Activation (PNTACT).....	130
10.3.33 Preventive Care (PREVCARE).....	130
10.3.34 Residence Timeline (RESTMLN).....	131
10.3.35 RX Medications (RXMED) .....	132
10.3.36 Satisfaction with Care (SATWCARE).....	132
10.3.37 Telemedicine (TELEMED).....	133
10.3.38 Usual Source of Care (USCARE).....	133
10.3.39 Vision and Hearing (VISHEAR).....	134
10.3.40 COVID-19 Facility Beneficiary-Level Supplement (FBENCVFL) .....	134
10.3.41 COVID-19 Facility Facility-Level Supplement (FFACCVFL).....	135
10.3.42 Weights.....	135

## **11. REFERENCES .....136**

**12. APPENDICES.....138**

Appendix A: MCBS Common Definitions..... 138

Appendix B: MCBS Rounds by Data Year and Season ..... 144

Appendix C: Sample Code ..... 145

Appendix D: Initial Interview Variables..... 150

Appendix E: Table of Links to MCBS Documentation..... 152

Appendix F: 2021 MCBS Survey File Segments and Historic RIC Segments..... 153

## LIST OF EXHIBITS

<b>Exhibit 3.5.1:</b>	<b>2021 MCBS Content Additions.....</b>	<b>12</b>
<b>Exhibit 4.1.1:</b>	<b>Typical MCBS Data Collection Year.....</b>	<b>19</b>
<b>Exhibit 4.1.2:</b>	<b>MCBS Beneficiary Participation Timeline.....</b>	<b>20</b>
<b>Exhibit 4.2:</b>	<b>2017-2021 MCBS Rotating Panel Design .....</b>	<b>21</b>
<b>Exhibit 4.4:</b>	<b>2021 MCBS Fall Round Completed Interviews: Continuing and Incoming Panels.....</b>	<b>22</b>
<b>Exhibit 5.1:</b>	<b>MCBS Questionnaire Overview.....</b>	<b>23</b>
<b>Exhibit 5.2:</b>	<b>Overview of the MCBS Community Questionnaire Components.....</b>	<b>25</b>
<b>Exhibit 5.2.1:</b>	<b>2021 Data Collection Year MCBS Community Questionnaire Flow for Baseline Interview .....</b>	<b>26</b>
<b>Exhibit 5.2.2:</b>	<b>2021 Data Collection Year MCBS Community Questionnaire Flow for Continuing Interview .....</b>	<b>27</b>
<b>Exhibit 5.2.3:</b>	<b>2021 Data Year MCBS Community Core Sections by Data File and Data Collection Schedule* .....</b>	<b>28</b>
<b>Exhibit 5.2.4:</b>	<b>Cost Series Section Overview.....</b>	<b>31</b>
<b>Exhibit 5.2.5:</b>	<b>Utilization and Cost Section Flow.....</b>	<b>32</b>
<b>Exhibit 5.2.6:</b>	<b>Example Paths Toward Cost Resolution .....</b>	<b>33</b>
<b>Exhibit 5.2.7:</b>	<b>Events Collected in the 2021 Data Year .....</b>	<b>34</b>
<b>Exhibit 5.2.8:</b>	<b>2021 Data Year MCBS Community Topical Sections by Data File and Data Collection Schedule .....</b>	<b>36</b>
<b>Exhibit 5.2.9:</b>	<b>2021 Data Collection Year MCBS Community Questionnaire Section Rotation .....</b>	<b>38</b>
<b>Exhibit 5.3:</b>	<b>Overview of the MCBS Facility Instrument.....</b>	<b>39</b>
<b>Exhibit 5.3.1:</b>	<b>2021 Data Collection Year MCBS Facility Instrument Flow for Baseline Interview.....</b>	<b>40</b>
<b>Exhibit 5.3.2:</b>	<b>2021 Data Collection Year MCBS Facility Instrument Flow for Continuing Interviews.....</b>	<b>41</b>
<b>Exhibit 5.3.3:</b>	<b>2021 Data Year MCBS Facility Core Sections by Data File and Data Collection Schedule* .....</b>	<b>42</b>
<b>Exhibit 5.3.4:</b>	<b>2021 Data Year MCBS Facility Topical Sections by Data File and Data Collection Schedule* .....</b>	<b>45</b>
<b>Exhibit 6.1:</b>	<b>2021 MCBS Composition of Panels Contributing to the LDS Data Files.....</b>	<b>46</b>

<b>Exhibit 6.1.1:</b>	<b>2021 Total Estimated Number of Medicare Beneficiaries by Sex and Race* .....</b>	<b>47</b>
<b>Exhibit 6.1.2:</b>	<b>2021 Estimated Number of Male Medicare Beneficiaries by Race and Age* .....</b>	<b>48</b>
<b>Exhibit 6.1.3:</b>	<b>2021 Estimated Number of Female Medicare Beneficiaries by Race and Age* .....</b>	<b>49</b>
<b>Exhibit 6.2.1:</b>	<b>2021 MCBS Sampling Strata.....</b>	<b>50</b>
<b>Exhibit 6.2.2:</b>	<b>2021 Panel of Selected Beneficiaries by Hispanic and Non-Hispanic Ethnicity Classification and Age Category* .....</b>	<b>51</b>
<b>Exhibit 6.4:</b>	<b>2021 MCBS Sample Selection for the LDS Releases .....</b>	<b>52</b>
<b>Exhibit 7.1:</b>	<b>2021 Contents of Data Releases .....</b>	<b>54</b>
<b>Exhibit 7.1.1:</b>	<b>2021 MCBS Survey File Segments and Contents .....</b>	<b>56</b>
<b>Exhibit 7.1.2:</b>	<b>2021 MCBS Cost Supplement File Segments and Contents .....</b>	<b>63</b>
<b>Exhibit 7.2:</b>	<b>MCBS Populations in Data Products .....</b>	<b>67</b>
<b>Exhibit 8.2.1:</b>	<b>Sort Order by Segment in the Survey File LDS .....</b>	<b>69</b>
<b>Exhibit 9.3.1:</b>	<b>Data Review and Editing Codes.....</b>	<b>73</b>
<b>Exhibit 9.4.1:</b>	<b>Crosswalk of 2021 Questionnaire Sections and LDS Segments with Topical Weights.....</b>	<b>76</b>
<b>Exhibit 9.4.2:</b>	<b>2021 MCBS Data Files Summary of Weights .....</b>	<b>78</b>
<b>Exhibit 9.7.1:</b>	<b>Constructing a Longitudinal Analytic File.....</b>	<b>85</b>
<b>Exhibit 9.7.2:</b>	<b>Constructing a Repeated Cross-Section or Pooled Analytic File.....</b>	<b>86</b>
<b>Exhibit 10.3.11.2a:</b>	<b>Primary RUCA (H_RUCA1) Codes, 2010 .....</b>	<b>105</b>
<b>Exhibit 10.3.11.2b:</b>	<b>Secondary RUCA (H_RUCA2) Codes, 2010 .....</b>	<b>106</b>
<b>Exhibit 10.3.13.3a:</b>	<b>FACASMNT Administrative Data Match Outcomes.....</b>	<b>110</b>
<b>Exhibit 10.3.13.3b:</b>	<b>FACASMNT Variables Populated with Administrative Data .....</b>	<b>110</b>
<b>Exhibit 10.3.13.3c:</b>	<b>Differences between FACASMNT and MDS3 Data.....</b>	<b>112</b>
<b>Exhibit 10.3.13.3d:</b>	<b>LDS Segments with Similar Topics for Community and Facility Interviews .....</b>	<b>112</b>
<b>Exhibit 10.3.33.1:</b>	<b>Segment, Questionnaire, and Variable Information for Analyses of 2020-2021 Flu Shot Data .....</b>	<b>131</b>
<b>Exhibit D.1:</b>	<b>Initial Interview Variables .....</b>	<b>150</b>

## ACRONYM LIST

ACCESSCR	Access to Care segment
ACCSSMED	Access to Care, Medical Appointments segment
ACQ	Access to Care Questionnaire
ACS	American Community Survey
ADLs	Activities of Daily Living
ADMNUTLS	Administrative Utilization Summary segment
ASSIST	Assistance segment
ATC	Access to Care
BQ	Background Questionnaire
BRR	Balanced repeated replication (or Fay's method)
CAPI	Computer-Assisted Personal Interviewing
CASPER	Certification and Survey Provider Enhanced Reports
CCN	CMS Certification Number
CDC	Centers for Disease Control and Prevention
CENWGTS	Continuously enrolled weights
CHRNCDL	Chronic Condition Flags segment
CHRNCOND	Chronic Conditions segment
CHRNPAIN	Chronic Pain segment
CMS	Centers for Medicare & Medicaid Services
CMQ	Cognitive Measures Questionnaire
COGNFUNC	Cognitive Measures segment
COMMDOSE	Community Questionnaire COVID-19 Vaccine Dosage segment
COVIDVAC	COVID-19 Vaccination segment
COVIDEXP	COVID-19 Experiences segment
CSEVRWGT	Cost Supplement File Ever Enrolled weights
CSL2WGTS	Cost Supplement File Longitudinal weights (2-year)
CSL3WGTS	Cost Supplement File Longitudinal weights (3-year)
CPS	Charge Payment Summary Questionnaire
CV	COVID-19 Beneficiary Supplement Questionnaire
CVQ	COVID-19 Questionnaire
DEMO	Demographics segment
DIABETES	Diabetes segment
DIQ	Demographics and Income Questionnaire
DME	Durable Medical Equipment segment
DUA	Data Use Agreement
DUE	Dental Utilization Events segment
DVH	Dental, Vision, and Hearing Utilization Questionnaire
ENS	Enumeration Summary Questionnaire
EOB	Explanation of Benefit Statements
EPPE	Enterprise Privacy Policy Engine
ERQ	Emergency Room Utilization Questionnaire
ERS	Economic Research Service
ESRD	End-stage renal disease
EVRWGTS	Ever enrolled population weights
EX	Expenditures Questionnaire
FACASMNT	Facility Assessments segment
FACCHAR	Facility Characteristics segment
FAE	Facility Events segment

FALLS	Falls segment
FBENCVFL	COVID-19 Facility Beneficiary-Level segment
FC	COVID-19 Facility-Level Supplement Questionnaire
FFACCVFL	COVID-19 Facility Facility-Level segment
FFS	Fee-for-Service
FOODINS	Food Insecurity segment
FQ	Facility Questionnaire
GAD	Generalized Anxiety Disorder screening tool (GAD-2)
GENHLTH	General Health segment
HAQ	Housing Characteristics Questionnaire
HFQ	Health Status and Functioning Questionnaire
HHCHAR	Household Characteristics segment
HHE	Home Health Events
HHQ	Home Health Utilization Questionnaire
HHS	Home Health Summary Questionnaire
HIPAA	Health Insurance Portability and Accountability Act
HIQ	Health Insurance Questionnaire
HISUMRY	Health Insurance Summary segment
HITLINE	Health Insurance Timeline segment
HMO	Health Maintenance Organization
HS	Health Status
HUE	Hearing Utilization Events segment
IADLs	Instrumental Activities of Daily Living
IAQ	Income and Assets Questionnaire
ID	Identification
IN	Introduction Questionnaire
INCASSET	Income and Assets segment
INQ	Introduction Questionnaire
INTERV	Interview Characteristics segment
IPE	Inpatient Hospital Events segment
IPQ	Inpatient Hospital Utilization Questionnaire
IRB	Institutional Review Board
IRQ	Interviewer Remarks Questionnaire
IUE	Institutional Events segment
IUQ	Institutional Utilization Questionnaire
KNQ	Beneficiary Knowledge and Information Needs Questionnaire
LDS	Limited Data Set(s)
LNG2WGTS	Survey File Longitudinal weights (2-year)
LNG3WGTS	Survey File Longitudinal weights (3-year)
LNG4WGTS	Survey File Longitudinal weights (4-year)
MA	Medicare Advantage
MAPLANQX	Medicare Advantage Plan Questions segment
MBQ	Mobility of Beneficiaries Questionnaire
MCBS	Medicare Current Beneficiary Survey
MCREPLNQ	Medicare Plan Beneficiary Knowledge segment
MDS	Minimum Data Set
MDS3	Minimum Data Set segment
MYENROLL	Multiple Year Enrollment segment
MENTHLTH	Mental Health segment
MMA	Medicare Prescription Drug, Improvement, and Modernization Act of 2003
MOBILITY	Mobility segment



MPE	Medical Provider Events segment
MPQ	Medical Provider Utilization Questionnaire
NAGIDIS	Nagi Disability segment
NICOALCO	Nicotine and Alcohol segment
NORC	NORC at the University of Chicago
NSQ	No Statement Charge Questionnaire
OASIS	Outcome and Assessment Information segment
OEDA	Office of Enterprise Data and Analytics
OMQ	Other Medical Expenses Utilization Questionnaire
OPE	Outpatient Hospital Events segment
OPQ	Outpatient Utilization Questionnaire
PAQ	Patient Activation Questionnaire
PDP	Prescription Drug Plan
PHQ	Patient Health Questionnaire depression screening tool (PHQ-9)
PM	Prescription Medicine
PME	Prescribed Medicine Events segment
PMQ	Prescribed Medicine Questionnaire
PNTACT	Patient Activation segment
PPIC	Patient Perceptions of Integrated Care Questionnaire
PPO	Preferred Provider Organization
PREVCARE	Preventive Care segment
PS	Person Summary segment
PSQ	Post-Statement Charge Questionnaire
PSU	Primary Sampling Units
PUF	Public Use File
PVQ	Preventive Care Questionnaire
RESTMLN	Residence Timeline segment
RH	Residence History
RIC	Record Identification Code
RUCA	Rural-Urban Commuting Area
RXMED	RX Medications segment
RXQ	Drug Coverage Questionnaire
SAS	Statistical Analysis System
SATWCARE	Satisfaction with Care segment
SCF	Sample Control File
SCQ	Satisfaction with Care Questionnaire
SNF	Skilled Nursing Facility
SS	Service Summary segment
SSU	Secondary Sampling Units
STQ	Statement Cost Series Questionnaire
TELEMED	Telemedicine segment
TLQ	Telemedicine Questionnaire
US	Use of Health Services Questionnaire
USCARE	Usual Source of Care segment
USDA	U.S. Department of Agriculture
USQ	Usual Source of Care Questionnaire
USU	Ultimate Sampling Unit
VISHEAR	Vision and Hearing segment
VRDC	Virtual Research Data Center
VUE	Vision Utilization Events segment

# 1. INTRODUCTION

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 Medicare Current Beneficiary Survey (MCBS) consists of a representative national sample of the Medicare population sponsored by the Centers for Medicare & Medicaid Services (CMS).<sup>1</sup> The MCBS is designed to aid CMS in administering, monitoring, and evaluating Medicare programs. 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 monitoring and evaluating beneficiary health status and health care policy.

The MCBS is a continuous, 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. Interviews are usually conducted in-person using computer-assisted personal interviewing (CAPI). However, due to the coronavirus disease 2019 (COVID-19) pandemic, data collection switched to phone-only interviews in March 2020 and throughout most of 2021 with a gradual return to some in-person interviewing beginning in November 2021. MCBS data collection will include both in-person and phone interviewing going forward. The MCBS has conducted continuous data collection since 1991, completing more than 1.2 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.

Annually, CMS releases four sets of files – two Public Use Files (PUFs) and two Limited Data Sets (LDS). The LDS releases are referred to as the Survey File and the Cost Supplement File. The data within the LDS releases are organized into data segments. The Survey File serves as a stand-alone research file and is generally released 18 months after the close of the calendar year for that data collection cohort. Some data for the Survey File are collected into the next calendar year to provide a complete picture of the beneficiary for analysis. For example, income and assets data are collected through the summer into the next calendar year. The Cost Supplement File is usually released approximately three months after the Survey File, when data collection has ended and final administrative and claims data for that calendar year become available. For the 2019 and 2020 data years, a total of three special PUFs were also released that provided data related to COVID-19.

**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.**

The Survey File contains information on beneficiaries' demographic information, health insurance coverage, self-reported health status and conditions, and responses regarding access to care and satisfaction with care. The Cost Supplement File contains a comprehensive accounting of beneficiaries' health care use, expenditures, and sources of payment. Detailed descriptions of each file, including the contents of the files, file structure,

<sup>1</sup> The MCBS is authorized by section 1875 (42 USC 139511) of the Social Security Act and is conducted by NORC at the University of Chicago for the U.S. Department of Health and Human Services. The OMB Number for this survey is 0938-0568.

information on new variables, key recodes, and administrative sources for select variables are included in each *Data User's Guide* (i.e., Survey File and Cost Supplement File).

Each data release (LDS and PUF) includes a *Data User's Guide* that offers a publicly available, easily searchable resource for data users. Beginning with the 2015 MCBS data release, data user's guides are updated for each new data year to ensure that users have current documentation on the survey design, methods, and estimation as well as MCBS data products. In this Guide, Section 7 ("Data Products and Documentation") provides a crosswalk from historical segments to 2021 segments. Note that for analyses on beneficiaries' health care costs and utilization, data users will need to use the Cost Supplement File in conjunction with the Survey File.

Information on content and access to the MCBS PUFs, including codebooks and additional documentation, can be found at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/MCBS-Public-Use-File>.

This *Data User's Guide* uses the following definitions for beneficiary and respondent:

- Beneficiary refers to a person receiving Medicare services who may or may not be participating in the MCBS.<sup>2</sup> Beneficiary may also refer to an individual selected from the MCBS sample about whom the MCBS collects information.
- Respondent is 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 (i.e., the Facility respondent).

For questions or suggestions on this document or other MCBS data-related questions, please email [MCBS@cms.hhs.gov](mailto:MCBS@cms.hhs.gov).

## 1.1 Contents of the Data User's Guide: Survey File

The content of the Survey File is governed by its central focus of serving as a unique source of information on beneficiaries' health and well-being that cannot be obtained through CMS administrative sources alone. The Survey File includes data related to Medicare beneficiaries' access to care, health status, and other information regarding beneficiaries' knowledge, attitudes towards, and satisfaction with their health care. The data release also contains demographic data and information on all types of health insurance coverage as well as Fee-for-Service (FFS) claims data, which provide information on medical services and payments made by Medicare under this plan type.

This Guide contains detailed information about the Survey File and specific background information to help data users understand and analyze the data. A companion *Data User's Guide* focuses on the Cost Supplement File LDS release.<sup>3</sup> Data users can access this Guide along with other data documentation at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks>. Please also see Appendix A: MCBS Common Definitions for descriptions of frequently used or key terms.

Here is an overview of the contents of the Data User's Guide: Survey File:

- Section 2: General Guidelines for Data Use – This section describes the main requirements for data use.
- Section 3: What's New? – This section describes the key MCBS Questionnaire changes and other highlights and enhancements for the data year.

<sup>2</sup> <https://www.cms.gov/Medicare/Medicare-General-Information/MedicareGenInfo/index.html>

<sup>3</sup> The Cost Supplement LDS and companion *Data User's Guide* is released three to four months after the Survey File LDS.

- Sections 4-9: Overview of the MCBS – These sections provide an overview of the MBCS, including the questionnaires and the file structure. They include a technical description of the specifications and structure of the file and a brief description of the record types in this file.
- Section 10: Data File Notes – This section provides an overview of each file included in the release, a description of derived variables, and any changes from previous releases or special highlights for data users.
- Sections 11-12: References and Appendices – This section provides references and key supporting documentation, including common definitions and sample programs for data users.

## 2. GENERAL GUIDELINES FOR DATA USE

The LDS files contain beneficiary-level health information, but exclude specific direct identifiers as outlined in the Health Insurance Portability and Accountability Act of 1996 (HIPAA). LDS files are considered identifiable, even without the inclusion of specific direct identifiers, due to the potential capability to link other sources of data, creating an increased risk of re-identification of individuals. Since the information provided on an LDS is considered identifiable, it also remains subject to the provisions of the Privacy Act of 1974.

### 2.1 Data Access

All requested LDS files require a signed LDS Data Use Agreement (DUA) between CMS and the data requestor to ensure that the data remain protected against unauthorized disclosure. LDS requestors must show that their proposed use of the data meets the disclosure provisions for research. The research purpose must relate to projects that could ultimately improve the care provided to Medicare patients and policies that govern the care. This type of research includes projects related to improving the quality of life for Medicare beneficiaries, improving the administration of the Medicare program, cost and payment related projects, and the creation of analytical reports. In addition, these research projects must contribute to generalizable knowledge.

Data users can submit an LDS request via a CMS DUA tracking system, the Enterprise Privacy Policy Engine or EPPE. EPPE can be used to initiate a new LDS DUA request or to amend/update an existing LDS DUA. Questions about LDS files or the process for requesting LDS files can be sent to [datauseagreement@cms.hhs.gov](mailto:datauseagreement@cms.hhs.gov). For additional information on data access and the DUA process, including instructions for accessing and using EPPE to make a request, data users can visit the CMS LDS website at [https://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/Data-Disclosures-Data-Agreements/DUA - NewLDS](https://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/Data-Disclosures-Data-Agreements/DUA-NewLDS).

Administrative processing fees for obtaining the LDS files are \$300 for the 2021 Survey File alone, and \$600 for the 2021 Survey File with the 2021 Cost Supplement (the Cost Supplement File cannot be acquired separately). The processing of the DUA takes approximately six to eight weeks. Upon approval and payment, CMS releases the data within ten business days, depending on the size of the data request. Data users will receive the data on DVD or via the CMS Virtual Research Data Center (VRDC) for use with SAS® or other statistical software packages; each data release contains multiple files that are linkable through a key identification variable (BASEID).

Questionnaires, codebooks, and Bibliographies for each survey year are available for download on the CMS MCBS website at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS>. A link to this documentation is also visible when approved data users log in to the VRDC.

### 2.2 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, [Data Product], [Year].

**Bibliography:** The suggested citation for the *2021 MCBS Data User's Guide* should read:

SOURCE: Centers for Medicare & Medicaid Services. *2021 Medicare Current Beneficiary Survey Data User's Guide: Survey File*. Retrieved from [ADD URL], [YEAR].

**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, Survey File data. Baltimore, MD: U.S. Department of Health and Human Services, 2021.

SOURCE: Centers for Medicare & Medicaid Services. Medicare Current Beneficiary Survey, Cost Supplement File data. Baltimore, MD: U.S. Department of Health and Human Services, 2021.

## 3. WHAT'S NEW FOR DATA YEAR 2021?

Below are the highlights and updates for the 2021 data year.

### 3.1 Sampling

There were no changes to sampling for the 2021 data year.

### 3.2 Questionnaires<sup>4</sup>

**Questionnaire content changes:** There were a number of questionnaire sections that were revised in 2021. Note that variable names referenced below are the questionnaire variable names. Data users can view the questionnaire for each data year along with the questionnaire variable names referenced below and question text on the MCBS website at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Questionnaires>.

#### 3.2.1 General

##### Community Questionnaire

The MCBS introduced several Community Questionnaire updates in 2021 to enhance survey content and data quality, improve interviewer and respondent experience, and address the evolving COVID-19 pandemic.

Additional details about questionnaire content and section-specific changes made in 2021 can be found in Section 3.2.2.

##### Facility Instrument

The MCBS introduced several Facility Instrument updates in 2021 to streamline content, improve interviewer and respondent experience, and address the evolving COVID-19 pandemic.

Additional details about questionnaire content and section-specific changes made in 2021 can be found in Section 3.2.2.

#### 3.2.2 Section-Specific Changes

##### Community Questionnaire

The MCBS introduced several Community Questionnaire updates in 2021 to enhance survey content and data quality, improve interviewer and respondent experience, and address the evolving COVID-19 pandemic.<sup>5</sup>

<sup>4</sup> Variable names referenced in section 3.2 are questionnaire variable names. The names and question text can be viewed on the MCBS website at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Questionnaires>.

<sup>5</sup> Questionnaire sections CVQ, KNQ, PVQ, TLQ and USQ are administered following the year of interest. Therefore, data collected for these sections in 2022 are released in the 2021 LDS. For more information on the differences between survey administration year versus data year, please refer to Tables 5.2.3 and 5.2.8.



## Summary of Item- and Section-Level Questionnaire Revisions

### COVID-19 (CVQ)

- In Fall 2021, 28 items were incorporated into the CVQ section from the standalone MCBS COVID-19 Community Supplements: 26 items on COVID-19 testing (including viral and antibody testing) and symptoms, and two items on preventive measures.
- In 2022, several changes were made to the COVID-19 Questionnaire (CVQ) section:
  - ▶ With the approval of COVID-19 vaccine booster doses in the Fall of 2021, it was necessary to build a questionnaire structure that had more flexibility to capture additional vaccine doses and dose details. Therefore, in Winter 2022, a roster-based looping structure, similar to that used by the MCBS for the collection of utilization events, was programmed to capture COVID-19 vaccination doses and all associated details, including the date of the dose, the vaccine manufacturer, and the location where the vaccine was administered. To accommodate this new structure, several new variables were added, and several existing variables were deleted.
  - ▶ The text at PRSUMVAC, which asks the beneficiary if they would get a vaccine to prevent COVID-19, was modified in Winter 2022 to align with the U.S. Census Bureau's Household Pulse Survey<sup>6</sup> and reflect that a COVID-19 vaccine is now available to most adults.
  - ▶ In Winter 2022, the code list at NOVACRSN, which collects the reason(s) why a beneficiary did not receive a COVID-19 vaccination dose, was updated to align with the U.S. Census Bureau's Household Pulse Survey.<sup>7</sup> Two additional response options, "Appointment scheduled" and "Has a health or medical condition which prevents getting the vaccine," were also added to the code list.
  - ▶ In Summer 2022, a new response option, "Not eligible for next dose yet," was added to the code list at NOVACRSN to reflect a commonly entered response at the variable that collects "other, specify" responses to NOVACRSN, NOVACRNOS. These variables were renamed to reflect these changes; NOVACRSN was renamed NOVCREAS and NOVACRNOS was renamed NOVACOS.

### Enumeration Summary (ENS)

- In Fall 2021, two changes were made in the Enumeration Summary (ENS) section to streamline collection of information about other members in the beneficiary's household. The universe of respondents at HHJBSTAT, which collected job status for all members of the household, was restricted to only the beneficiary's spouse or partner. The variable was renamed SPOUSJOB to reflect this change to the respondent universe. The questionnaire was modified to only ask full date of birth for the beneficiary and their spouse or partner. For all other members of the household, day of birth (EHHDOBDD) is no longer asked and only the month (EHHDOBMM) and year (EHHDOBY) of birth is collected.

### Housing Characteristics (HAQ)

- Several items from the Accountable Health Communities (AHC) Health-Related Social Needs Screening Tool<sup>8</sup> on housing insecurity were adapted for administration in the Housing Characteristics (HAQ) section in Fall 2021. The first item, LIVNGSIT, asks the beneficiary to select which best describes their living situation today: they have a steady place to live, they have a steady place to live right now but are worried about losing it in the future, or they do not have a steady place to live. Eight follow-up items were added to

<sup>6</sup> "Phase 3.5 Household Pulse Survey," U.S. Census Bureau, 2022, [https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-5\\_Questionnaire\\_07\\_20\\_22\\_English.pdf](https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-5_Questionnaire_07_20_22_English.pdf)

<sup>7</sup> "Phase 3.5 Household Pulse Survey," U.S. Census Bureau, 2022, [https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-5\\_Questionnaire\\_07\\_20\\_22\\_English.pdf](https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-5_Questionnaire_07_20_22_English.pdf)

<sup>8</sup> "The Accountable Health Communities Health-Related Social Needs Screening Tool," Centers for Medicare & Medicaid Services, accessed August 2021. <https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf>



collect problems with the beneficiary's residence such as pests (HOUSPEST), mold (HOUSEHOLD), lead paint or pipe (HOUSLEAD), lack of heat (HOUSHEAT), lack of cooling system (HOUSCOOL), oven or stove not working (HOUSOVEN), smoke detectors missing or not working (HOUSMOK), and water leaks (HOUSWATR).

### Health Status & Functioning (HFQ)

There were five updates to the Health Status & Functioning (HFQ) section in Fall 2021:

- Two items that measure autoimmune disease prevalence were integrated into HFQ from the standalone COVID-19 Community Supplement. The first item, AUTOIMRX, collects whether the beneficiary has taken prescription medication or had any medical treatment that would weaken their immune system. The second item, WEAKIMM, asks the respondent whether they currently have a health condition that weakens the immune system.
- Item SOCISOLA was added to HFQ as a measure of social isolation. The item was sourced from the Accountable Health Communities (AHC) Health-Related Social Needs Screening Tool<sup>9</sup> and collects how often the respondent has felt lonely or isolated from those around them.
- Three new items about dietary supplement use were introduced in Fall 2021. These items collect whether the beneficiary has used or taken any vitamins, minerals, herbals, or other dietary supplements in the past 12 months (DISUPPYR), whether they took any multivitamins over the past 12 months (MULTVTYR), and what vitamins and dietary supplements were taken in the last 12 months (VITSUPPYR). These items were sourced from the U.S. National Health and Nutrition Examination Survey (NHANES),<sup>10</sup> the National Institutes of Health, National Cancer Institute, Diet History Questionnaire (DHQ) Version I,<sup>11</sup> and DHQ Version III,<sup>12</sup> respectively.
- Two items from the Canadian Nutrition Screening Tool (CNST)<sup>13</sup> about unintentional weight loss, LOSTWGHT and EATLESWK, were incorporated into HFQ. These items ask if the respondent has lost weight in the past six months without trying and if the respondent has been eating less than usual for more than a week.
- Finally, the administration schedule of six vision-related items was updated such that they are skipped if the respondent ever had a response of "Yes" in a prior interview. As the universe of respondents changed for each variable, variables ECATARAC, EGLAUCOM, ERETINOP, EMACULAR, ECCATOP, and ELASRSUR were renamed CATAREVR, GLCOMEVR, RETINEVR, MACULEVR, CATAROP, and EYESURG.

### Beneficiary Knowledge and Information Needs (KNQ)

- Two items from the standalone MCBS COVID-19 Community Supplement were integrated into the main MCBS Community Questionnaire to collect information on access to computers and technology. Existing KNQ item KNHAVCOM was replaced with a new question from the MCBS COVID-19 Community Supplement, COMPUTER, which asks the beneficiary about usage of different computers (e.g., desktop, laptop, smartphone, etc.). AUDIOVID was also added to capture whether beneficiaries have participated in video or voice calls over the internet. These items were sourced from the Census Bureau's American

<sup>9</sup> "The Accountable Health Communities Health-Related Social Needs Screening Tool," U.S. Centers for Medicare & Medicaid Services, accessed August 2021, <https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf>

<sup>10</sup> "National Health and Nutrition Examination Survey," National Center for Health Statistics, accessed August 2021, <https://wwwn.cdc.gov/nchs/nhanes/>

<sup>11</sup> "Diet History Questionnaire," National Institutes of Health, National Cancer Institute, accessed August 2021, <https://epi.grants.cancer.gov/dhq/forms/dhq1.2007.sample.pdf>

<sup>12</sup> Diet History Questionnaire III (DHQ III)," National Institutes of Health, National Cancer Institute, accessed August 2021, <https://epi.grants.cancer.gov/dhq3/index.html>

<sup>13</sup> "Canadian Nutrition Screening Tool," Canadian Nutrition Society, accessed August 2021, <https://nutritioncareinCanada.ca/sites/default/uploads/files/CNST.pdf>

Community Survey (ACS) and November 2019 Current Population Survey (CPS) Computer and Internet Use Supplement.<sup>14</sup>

### Preventive Care (PVQ)

- In Winter 2022, on-screen interviewer help text was added to VACAVAIL, clarifying that the question is asking whether the seasonal flu shot was available to the respondent, regardless of whether they received or wanted one.

### Telemedicine (TLQ)

- In Winter 2022, a new questionnaire section, the Telemedicine Questionnaire (TLQ), was added to the questionnaire to respondents who report having a usual source of care in the Usual Source of Care (USQ) section. The TLQ section incorporates a subset of items about telemedicine availability and use from the standalone MCBS COVID-19 Supplement, which was last fielded in Winter 2021. These items were sourced from the National Center for Health Statistics (NCHS) COVID-19 Research and Development Survey (RANDS).<sup>15</sup> As this series will be fielded annually, these items have a reference period of 12 months.

### Usual Source of Care (USQ)

There were three updates to the Usual Source of Care (USQ) section in Winter 2022:

- Item NOTAVAIL asks if there was ever a time when test results, medical records, or reasons for referrals were not available at the time of the beneficiary's scheduled doctor or other health professional appointment. In Winter 2022, the "(-8) DON'T KNOW" response option at this item was removed since the code list already includes "(04) NOT SURE," which captures similar information.
- During Winter 2020 data collection, field interviewers asked if telemedicine visits should be included at PROVRY in USQ, which asks the beneficiary if they have seen their usual provider in the last 12 months. In Winter 2022, help text was added at PROVRY, instructing field interviewers to collect telemedicine visits at this question since the follow-up items in the section apply to both in-person and telemedicine visits.
- TSFLWUP asks about whether a medical provider ordered follow-up tests (e.g., blood test, x-rays, or other tests). The code list was updated to include "Not applicable" as a valid response option given TSTFLWUP is not applicable to respondents who have not had any tests done within the last year or have recently completed a test for the first time with their usual provider.

## Facility Instrument

- There were several changes to the Facility Instrument in 2021, including updates question text, programming logic, and the addition of new questionnaire items.

### Background Questionnaire (BQ)

- In Fall 2021, several updates were implemented within the BQ section to streamline data collection about other household members. The intent of these updates was to align with updates made within the ENS section of the Community Questionnaire:
  - ▶ Within the BQ section, the respondent is asked where the beneficiary lived prior to entering the facility. Previously, if the beneficiary lived in a private home or apartment, then the respondent was asked whether the beneficiary lived alone in this place (BQRH30AA-BLIVALONE). If the beneficiary lived with

<sup>14</sup> American Community Survey (ACS) and November 2019 Current Population Survey (CPS) Computer and Internet Use Supplement, U.S. Census Bureau, <https://www.census.gov/data/datasets/2019/demo/cps/cps-computer.html>

<sup>15</sup> "COVID-19 Research and Development Survey (RANDS)," National Center for Health Statistics, 2020, <https://www.cdc.gov/nchs/covid19/rands.htm>

someone, then the respondent was asked a series of questions to determine the relationship(s) of the person(s) they lived with (BQRH30A-BLIVewith) and the total number of people they lived with (BQRH30A1-BDAUGN through BQRH30A14-BONRN). Starting in Fall 2021, instead of asking a series of questions to collect each person that previously lived with the beneficiary, these questions were combined and replaced with two new questions, BQRH31A-BLIVEWAL and BQRH31B-BLIVENUM, which collect the same information in a more streamlined format. Routing was updated to accommodate these new variables.

- ▶ Instead of asking for the number of living daughters (BQ18-BTOTLDAU) and sons (BQ19-BTOTLSON) separately, these questions were deleted and replaced with a new question that collects the total number of living children a beneficiary has (BQ20-BTOTLCHI). Routing was updated to accommodate this new variable.
- ▶ The "OTHER" response option was removed from the item which asks where the beneficiary's husband or wife lives now (BQ15-BHWLIVES) and the accompanying "OTHER SPECIFY" variable (BQ15-BHWLIVOS) was removed.

### COVID-19 Beneficiary Supplement (CV)<sup>16</sup>

- In Summer 2021, a few changes were made within the COVID-19 Beneficiary Supplement (CV):
  - ▶ Item CV4-MEDICARE, which asked if the beneficiary received medical care for COVID-19, was previously asked of all cases eligible to receive the CV section. The routing logic was updated such that CV4-MEDICARE is only asked if either a positive COVID-19 test or a positive antibody test was reported for the beneficiary. The item was renamed CV4-MCARECV due to the new universe and routing was updated to accommodate this change.
  - ▶ A new variable, CVSD-CDCVAC2, and routing logic were added to collect only second COVID-19 vaccine dose information for beneficiaries with a first COVID-19 vaccine dose reported in a previous interview.
  - ▶ New questions were added to the CV section to capture the vaccination name for each dose reported (CV5BT-VAC1TYPE, CV5BT-VAC1TYOT, CV5CT-VAC2TYPE, and CV5CT-VAC2TYOT).

### COVID-19 Facility-Level Supplement (FC)

- Starting in Fall 2021, some of the Facility-level COVID-19 items were removed and reorganized to reflect the changing nature of the COVID-19 pandemic:
  - ▶ Items that were more applicable to the beginning of the pandemic were removed, such as those collecting information on the suspension of in-person health services inside and outside of the facility and availability of telehealth services inside and outside of the facility prior to the pandemic.
  - ▶ Several items were maintained because of their continued importance in measuring the impact of the COVID-19 pandemic on facilities, such as availability of current telehealth services inside and outside of the facility, the facility's measures to prevent and control the spread of COVID-19, and mental health and social and recreational services offered and/or coordinated by the facility. These remaining items were moved into a new section, the COVID-19 Facility-Level Supplement (FC), to streamline administration.

### Health Status (HS)

- In order to avoid re-collecting certain items included in the Long-Term Care Minimum Data Set (MDS), box routing at BOX HA9B and BOX HA28 was updated in the Health Status (HS) section for Fall 2021. In

<sup>16</sup> In Winter 2022, to align with the Community Questionnaire's CVQ, the Facility Instrument's CV section also implemented a questionnaire structure that had more flexibility to capture additional vaccine doses and dose details. This is not described in the 2021 Survey File Data User's Guide as these changes align with the 2022 data year for the Facility Instrument.

previous rounds, items asking about intellectual disability, developmental disability problems, active diseases, active infections, and active diagnoses (HA9B-MENTAL, HA28PREB-HA28PRBC, HA28B-HA28BCD1, HA28B-HA28BOSP, HA29B-HA29BCOD, HA30B-OTMDS DIA, HA31B-HA31BCOD, HA31BO[1-10]-MDCOTH[1-10]) were skipped for Medicare- or Medicaid-certified facility cases where a CMS Certification Number (CCN) had been previously collected, with the exception of Baseline cases where the beneficiary is under age 65. The updated routing skips these items for all cases regardless of interview type or age if a CCN is collected, as the data can instead be incorporated from the MDS administrative data during data processing.

### Residence History (RH)

- Three changes were made to the Residence History (RH) section in 2021:
  - ▶ Items RHA11A-RHPROBE1 and RH11B-RHPROBE2 record if the beneficiary left the interviewed Facility within the reference period. However, the response options were unclear as to whether the beneficiary continued to live in the target facility or left the target facility. To clarify, the response option text at these items were updated in Winter 2021 to be more explicit.
  - ▶ Similarly, RH12-RHPROBE3 records if the beneficiary was in the current location for the entire reference period or if they moved locations. However, the response options were unclear as to whether they were recording that the beneficiary continued to live in the current location or left it. To clarify, the response option text at this item was updated in Winter 2021 to be more explicit.
  - ▶ In the RH section, there are variables similar to BQ section variables that ask where the beneficiary lived prior to the facility. Starting in Fall 2021, instead of first asking whether the beneficiary lived alone (RH30A-LALONE) and then asking who lived with them (RH30-LWITH), these questions were combined and replaced with a single question that asks who lived with the beneficiary prior to the facility (RH31A-LIVEALWI). Routing was also updated to accommodate this new variable.

## 3.3 Data Collection

**Mode change:** Due to the COVID-19 pandemic, data collection switched to phone-only interviews in March 2020 and throughout most of 2021 with a gradual return to some in-person interviewing beginning in November 2021. MCBS data collection will include both in-person and phone interviewing going forward to reduce costs and continue addressing pandemic safety protocols. Mode effects are discussed in further detail in the *2021 MCBS Methodology Report*.

## 3.4 Documentation

This 2021 *Data User's Guide* was enhanced with the following content:

- A new section, *Overview of MCBS Documentation*, was added to the beginning of the Data User's Guide to provide a brief description of each MCBS documentation product.
- The sample SAS code in Appendix C was updated to include corresponding PROC SQL code.
- Guidance on analyzing data from Topical Survey File LDS segments and using the corresponding Topical weights was enhanced with additional detail.

## 3.5 Data Processing

### New and revised content:

For the 2021 Survey File LDS, the MCBS created the following new segments:

- COMMDOSE contains COVID-19 vaccine dosage information collected in the Community Questionnaire.
- COVIDEXP contains information on Community beneficiaries' experiences with COVID-19.
- TELEMED contains information on availability and usage of telemedicine visits.
- MYENROLL contains up to five years of beneficiaries' enrollment information.

The 2021 questionnaire changes resulted in the following variables added to the annual releases (see Exhibit 3.5.1). Additionally, beginning with 2021, the FFS Research Claims files now include five years of claims data instead of one year (see Section 8.3 for more information). The INCASSET segment also underwent several notable changes in 2021 to improve its analytic usability for researchers (see Section 10.3.21 for more information).

### Exhibit 3.5.1: 2021 MCBS Content Additions

Location	Questionnaire Section	Variable	Description
COMMDOSE	CVQ	D_ANTBDT	SP TESTED FOR COVID-19 ANTIBODIES
COMMDOSE	CVQ	D_ANTPAY	HOW MUCH SP PAID FOR COVID-19 ANTIBODY TEST
COMMDOSE	CVQ	D_ANTRES	RESULT OF THE COVID-19 ANTIBODY TEST
COMMDOSE	CVQ	D_ANTWAI	WAIT TIME FOR COVID-19 ANTIBODY TEST RESULT
COMMDOSE	CVQ	D_COVSWB	SP TESTED FOR ACTIVE COVID-19 SINCE FALL 2021
COMMDOSE	CVQ	D_CVDEVR	SP TOLD THEY LIKELY HAVE COVID-19 SINCE FALL 2021
COMMDOSE	CVQ	D_CVDEXP	SP DID NOT GET TREATED: TOO EXPENSIVE
COMMDOSE	CVQ	D_CVDHOS	SP WAS HOSPITALIZED OVERNIGHT FOR COVID-19
COMMDOSE	CVQ	D_CVDNTA	SP DID NOT GET TREATED: NOT AVAILABLE
COMMDOSE	CVQ	D_CVDOTH	SP DID NOT GET TREATED: OTHER REASON
COMMDOSE	CVQ	D_CVDSEE	SP SOUGHT MEDICAL CARE FOR COVID-19
COMMDOSE	CVQ	D_CVDSVR	SEVERITY OF COVID-19 SYMPTOMS
COMMDOSE	CVQ	D_CVDSYM	SP DID NOT GET TREATED: SYMPTOMS WERE NOT SEVERE
COMMDOSE	CVQ	D_CVTSTP	HOW MUCH SP PAID FOR ACTIVE COVID-19 TEST
COMMDOSE	CVQ	D_DSNUM1	NUMBER (EVER) OF 1 <sup>ST</sup> DOSE AFTER FALL 2021
COMMDOSE	CVQ	D_DSNUM2	NUMBER (EVER) OF 2 <sup>ND</sup> DOSE AFTER FALL 2021
COMMDOSE	CVQ	D_DSNUM3	NUMBER (EVER) OF 3 <sup>RD</sup> DOSE AFTER FALL 2021
COMMDOSE	CVQ	D_DSNUM4	NUMBER (EVER) OF 4 <sup>TH</sup> DOSE AFTER FALL 2021
COMMDOSE	CVQ	D_NOBELI	REASON SP DID NOT GET THE VACCINE: DIDN'T KNOW IT WAS NEEDED
COMMDOSE	CVQ	D_NOCOST	REASON SP DID NOT GET THE VACCINE: SP COULD NOT AFFORD IT
COMMDOSE	CVQ	D_NODRR	REASON SP DID NOT GET THE VACCINE: DR DID NOT RECCOMEND
COMMDOSE	CVQ	D_NOEFFE	REASON SP DID NOT GET THE VACCINE: SIDE EFFECTS
COMMDOSE	CVQ	D_NOHADC	REASON SP DID NOT GET THE VACCINE: ALREADY HAD COVID-19



Location	Questionnaire Section	Variable	Description
COMMDOSE	CVQ	D_NONEDL	REASON SP DID NOT GET THE VACCINE: SP DISLIKES SHOTS/NEEDLES
COMMDOSE	CVQ	D_NOOTH	REASON SP DID NOT GET THE VACCINE: OTHER
COMMDOSE	CVQ	D_NOPROT	REASON SP DID NOT GET THE VACCINE: SP BELIEVED IT WOULDN'T PROTECT AGAINST COVID-19
COMMDOSE	CVQ	D_NOSCHE	REASON SP DID NOT GET THE VACCINE: APPOINTMENT SCHEDULING
COMMDOSE	CVQ	D_NOTHRE	REASON SP DID NOT GET THE VACCINE: SP DIDN'T BELIEVE COVID-19 WAS SERIOUS
COMMDOSE	CVQ	D_NOTSTV	REASON SP DID NOT GET THE VACCINE: SP DID NOT TRUST THE GOVERNMENT
COMMDOSE	CVQ	D_ONEDOS	SP HAD 1+ COVID-19 VACCINE DOSES
COMMDOSE	CVQ	D_PREVGR	SP AVOIDED LARGE GROUPS SINCE FALL 2021
COMMDOSE	CVQ	D_PREVMA	SP WORE A FACEMASK SINCE FALL 2021
COMMDOSE	CVQ	D_SMPTAC	PERSISTENT SYMPTOM: MUSCLE ACHE
COMMDOSE	CVQ	D_SMPTAN	PERSISTENT SYMPTOM: ANXIETY
COMMDOSE	CVQ	D_SMPTCO	PERSISTENT SYMPTOM: COUGH/SHORTNESS OF BREATH
COMMDOSE	CVQ	D_SMPTDI	PERSISTENT SYMPTOM: DIZZINESS/MEMORY
COMMDOSE	CVQ	D_SMPTFA	PERSISTENT SYMPTOM: FATIGUE
COMMDOSE	CVQ	D_SMPTHE	PERSISTENT SYMPTOM: HEADACHE
COMMDOSE	CVQ	D_SMPTHR	PERSISTENT SYMPTOM: HEART PROBLEM
COMMDOSE	CVQ	D_SMPTOT	PERSISTENT SYMPTOM: OTHER
COMMDOSE	CVQ	D_SUSCHI	SUSPECTED COVID-19: CHILLS
COMMDOSE	CVQ	D_SUSCOU	SUSPECTED COVID-19: COUGH
COMMDOSE	CVQ	D_SUSDIA	SUSPECTED COVID-19: DIARRHEA
COMMDOSE	CVQ	D_SUSFAT	SUSPECTED COVID-19: FATIGUE
COMMDOSE	CVQ	D_SUSFEV	SUSPECTED COVID-19: FEVER
COMMDOSE	CVQ	D_SUSHDA	SUSPECTED COVID-19: HEADACHE
COMMDOSE	CVQ	D_SUSLAP	SUSPECTED COVID-19: LOSS OF APPETITE
COMMDOSE	CVQ	D_SUSLTS	SUSPECTED COVID-19: LOSS OF TASTE/SMELL
COMMDOSE	CVQ	D_SUSMUS	SUSPECTED COVID-19: MUSCLE PAIN
COMMDOSE	CVQ	D_SUSNAU	SUSPECTED COVID-19: NAUSEA
COMMDOSE	CVQ	D_SUSOTH	SUSPECTED COVID-19: OTHER
COMMDOSE	CVQ	D_SUSPEC	SP SUSPECTED THEY HAD COVID-19 SINCE FALL 2021
COMMDOSE	CVQ	D_SUSRNO	SUSPECTED COVID-19: RUNNY NOSE
COMMDOSE	CVQ	D_SUSSNE	SUSPECTED COVID-19: SNEEZING
COMMDOSE	CVQ	D_SUSSRT	SUSPECTED COVID-19: SHORTNESS OF BREATH
COMMDOSE	CVQ	D_SUSTHR	SUSPECTED COVID-19: SORE THROAT
COMMDOSE	CVQ	D_SUSVOM	SUSPECTED COVID-19: VOMITING
COMMDOSE	CVQ	D_SWABRS	RESULT OF ACTIVE COVID-19 TEST
COMMDOSE	CVQ	D_SWABWA	WAIT TIME FOR ACTIVE COVID-19 TEST RESULT

Location	Questionnaire Section	Variable	Description
<b>COMMDOSE</b>	CVQ	D_TWODOS	SP HAD 2+ COVID-19 VACCINE DOSES
<b>COMMDOSE</b>	CVQ	D_VCDMM1	MONTH OF 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCDMM2	MONTH OF 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCDMM3	MONTH OF 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCDMM4	MONTH OF 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCDYY1	YEAR OF 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCDYY2	YEAR OF 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCDYY3	YEAR OF 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCDYY4	YEAR OF 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCNUMF	NUMBER OF COVID-19 DOSES REPORTED BY FALL 2021
<b>COMMDOSE</b>	CVQ	D_VCNUMS	NUMBER OF COVID-19 DOSES REPORTED BY SUMMER 2022
<b>COMMDOSE</b>	CVQ	D_VCNME1	BRAND OF 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCNME2	BRAND OF 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCNME3	BRAND OF 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCNME4	BRAND OF 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCREC1	SP RECEIVED 1+ COVID-19 VACCINE DOSE AFTER FALL 2021
<b>COMMDOSE</b>	CVQ	D_VCREC2	SP RECEIVED 2+ COVID-19 VACCINE DOSES AFTER FALL 2021
<b>COMMDOSE</b>	CVQ	D_VCREC3	SP RECEIVED 3+ COVID-19 VACCINE DOSES AFTER FALL 2021
<b>COMMDOSE</b>	CVQ	D_VCREC4	SP RECEIVED 4+ COVID-19 VACCINE DOSES AFTER FALL 2021
<b>COMMDOSE</b>	CVQ	D_VCRND1	ROUND DATA COLLECTED FOR 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCRND2	ROUND DATA COLLECTED FOR 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCRND3	ROUND DATA COLLECTED FOR 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCRND4	ROUND DATA COLLECTED FOR 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCSIT1	SITE OF 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCSIT2	SITE OF 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCSIT3	SITE OF 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>COMMDOSE</b>	CVQ	D_VCSIT4	SITE OF 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>FACASMNT</b>	HS	PHQINTRO	SP COMPLETED THE RESIDENT MOOD INTERVIEW
<b>FACASMNT</b>	HS	PHQSCORE	SYMPTOM FREQUENCY SCORE TOTAL
<b>FACASMNT</b>	HS	PHQSFQAP	HOW LONG HAS SP HAD A POOR APPETITE OR OVERATE
<b>FACASMNT</b>	HS	PHQSFQCO	HOW LONG HAS SP HAD TROUBLE CONCENTRATING
<b>FACASMNT</b>	HS	PHQSFQDE	HOW LONG HAS SP FELT DEPRESSED

Location	Questionnaire Section	Variable	Description
<b>FACASMNT</b>	HS	PHQSFQIN	HOW LONG HAS SP HAD LITTLE INTEREST IN DOING THINGS
<b>FACASMNT</b>	HS	PHQSFQMO	HOW LONG HAS SP MOVED SLOWLY OR WAS FIDGITY/RESTLESS
<b>FACASMNT</b>	HS	PHQSFQSE	HOW LONG HAS SP FELT BAD ABOUT THEMSELF
<b>FACASMNT</b>	HS	PHQSFQSL	HOW LONG HAS SP HAD TROUBLE SLEEPING
<b>FACASMNT</b>	HS	PHQSFQSU	HOW LONG HAS SP SELF HARMED
<b>FACASMNT</b>	HS	PHQSFQTE	HOW LONG HAS SP BEEN EASILY ANNOYED
<b>FACASMNT</b>	HS	PHQSFQTI	HOW LONG HAS SP FELT TIRED OR HAD LOW ENERGY
<b>FACASMNT</b>	HS	PHQSYAPT	SP HAD A POOR APPETITE OR OVERATE
<b>FACASMNT</b>	HS	PHQSYCON	SP HAD TROUBLE CONCENTRATING
<b>FACASMNT</b>	HS	PHQSYDEP	SP FELT DEPRESSED
<b>FACASMNT</b>	HS	PHQSYINT	SP HAD LITTLE INTEREST IN DOING THINGS
<b>FACASMNT</b>	HS	PHQSYMOV	SP MOVED SLOWLY OR WAS FIDGETY/RESTLESS
<b>FACASMNT</b>	HS	PHQSYSES	SP FELT BAD ABOUT THEMSELF
<b>FACASMNT</b>	HS	PHQSYSLP	SP HAD TROUBLE SLEEPING
<b>FACASMNT</b>	HS	PHQSYSUI	SP SELF HARMED
<b>FACASMNT</b>	HS	PHQSYTEM	SP WAS EASILY ANNOYED
<b>FACASMNT</b>	HS	PHQSYTIR	SP FELT TIRED OR HAD LOW ENERGY
<b>FBENCVFL</b>	CV	FOURDOSF	SP HAD 4+ COVID-19 VACCINE DOSES
<b>FBENCVFL</b>	CV	ONEDOSEF	SP HAD 1+ COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	THREDOSF	SP HAD 3+ COVID-19 VACCINE DOSES
<b>FBENCVFL</b>	CV	TWODOSEF	SP HAD 2+ COVID-19 VACCINE DOSES
<b>FBENCVFL</b>	CV	VACMM1F	MONTH OF 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACMM2F	MONTH OF 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACMM3F	MONTH OF 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACMM4F	MONTH OF 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACNM1F	BRAND OF 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACNM2F	BRAND OF 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACNM3F	BRAND OF 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACNM4F	BRAND OF 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACNUMTF	NUMBER OF COVID-19 VACCINE DOSES EVER
<b>FBENCVFL</b>	CV	VACY1F	YEAR OF 1 <sup>ST</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACY2F	YEAR OF 2 <sup>ND</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACY3F	YEAR OF 3 <sup>RD</sup> COVID-19 VACCINE DOSE
<b>FBENCVFL</b>	CV	VACY4F	YEAR OF 4 <sup>TH</sup> COVID-19 VACCINE DOSE
<b>FFACCVFL</b>	FC	INDRTEL	TELEMEDICINE OFFERED INSIDE FACILITY
<b>FFACCVFL</b>	FC	OUTDRTEL	TELEMEDICINE OFFERED FROM OUTSIDE FACILITY
<b>FFACCVFL</b>	FC	TELDENTN	SERVICES OFFERED THROUGH TELEMEDICINE: DENTAL CARE
<b>FFACCVFL</b>	FC	TELEDHBN	SERVICES OFFERED THROUGH TELEMEDICINE: EDUCATIONAL/HABILITATION SERVICES



Location	Questionnaire Section	Variable	Description
FFACCVFL	FC	TELMHN	SERVICES OFFERED THROUGH TELEMEDICINE: MENTAL HEALTH
FFACCVFL	FC	TELOTHN	SERVICES OFFERED THROUGH TELEMEDICINE: OTHER
FFACCVFL	FC	TELPDND	SERVICES OFFERED THROUGH TELEMEDICINE: PODIATRIST
FFACCVFL	FC	TELSERV	FACILITY OFFERS TELEMEDICINE NOW
GENHLTH	HFQ	VITCAL	VITAMINS/SUPPLEMENTS TAKEN - CALCIUM
GENHLTH	HFQ	VITCHOL	VITAMINS/SUPPLEMENTS TAKEN - CHOLINE
GENHLTH	HFQ	VITCOEN	VITAMINS/SUPPLEMENTS TAKEN - COENZYME Q
GENHLTH	HFQ	VITEYE	VITAMINS/SUPPLEMENTS TAKEN - EYE HEALTH SUPPLEMENT
GENHLTH	HFQ	VITFIBER	VITAMINS/SUPPLEMENTS TAKEN - FIBER SUPPLEMENT
GENHLTH	HFQ	VITFOLAT	VITAMINS/SUPPLEMENTS TAKEN - FOLATE
GENHLTH	HFQ	VITGARLI	VITAMINS/SUPPLEMENTS TAKEN - GARLIC SUPPLEMENT
GENHLTH	HFQ	VITIRON	VITAMINS/SUPPLEMENTS TAKEN - IRON
GENHLTH	HFQ	VITJOINT	VITAMINS/SUPPLEMENTS TAKEN - JOINT SUPPLEMENT
GENHLTH	HFQ	VITMAGNE	VITAMINS/SUPPLEMENTS TAKEN - MAGNESIUM
GENHLTH	HFQ	VITMELAT	VITAMINS/SUPPLEMENTS TAKEN - MELATONIN
GENHLTH	HFQ	VITNIACI	VITAMINS/SUPPLEMENTS TAKEN - NIACIN
GENHLTH	HFQ	VITOMEGA	VITAMINS/SUPPLEMENTS TAKEN - OMEGA-3
GENHLTH	HFQ	VITOTHER	VITAMINS/SUPPLEMENTS TAKEN - OTHER SUPPLEMENT(S)
GENHLTH	HFQ	VITPOTAS	VITAMINS/SUPPLEMENTS TAKEN - POTASSIUM
GENHLTH	HFQ	VITPROBI	VITAMINS/SUPPLEMENTS TAKEN - PROBIOTICS
GENHLTH	HFQ	VITSAWP	VITAMINS/SUPPLEMENTS TAKEN - SAW PALMETTO
GENHLTH	HFQ	VITVITA	VITAMINS/SUPPLEMENTS TAKEN - VITAMIN A
GENHLTH	HFQ	VITVITB	VITAMINS/SUPPLEMENTS TAKEN - VITAMIN B-12
GENHLTH	HFQ	VITVITBC	VITAMINS/SUPPLEMENTS TAKEN - VITAMIN B-COMPLEX
GENHLTH	HFQ	VITVITC	VITAMINS/SUPPLEMENTS TAKEN - VITAMIN C
GENHLTH	HFQ	VITVITD	VITAMINS/SUPPLEMENTS TAKEN - VITAMIN D
GENHLTH	HFQ	VITVITE	VITAMINS/SUPPLEMENTS TAKEN - VITAMIN E
GENHLTH	HFQ	VITZINC	VITAMINS/SUPPLEMENTS TAKEN - ZINC
GENHLTH	HFQ	LOSTWGHT	HAS SP LOST WEIGHT UNINTENTIONALLY IN LAST 6 MONTHS
GENHLTH	HFQ	EATLESWK	HAS SP BEEN EATING LESS THAN USUAL FOR OVER A WEEK
GENHLTH	HFQ	DISUPPYR	HAS SP TAKEN ANY DIETARY SUPPLEMENTS
GENHLTH	HFQ	MULTVTYR	HAS SP TAKEN ANY MULTIVITAMINS

Location	Questionnaire Section	Variable	Description
<b>GENHLTH</b>	HFQ	AUTOIMRX	TOOK MEDICINE OR HAD TREATMENT THAT WEAKENS IMMUNE SYSTEM
<b>GENHLTH</b>	HFQ	WEAKIMM	HAS CONDITION THAT WEAKENS IMMUNE SYSTEM
<b>HHCHAR</b>	HAQ	LIVNGSIT	LIVING SITUATION
<b>HHCHAR</b>	HAQ	HOUSPEST	PLACE SP LIVES HAS- PESTS
<b>HHCHAR</b>	HAQ	HOUSMOLD	PLACE SP LIVES HAS- MOLD
<b>HHCHAR</b>	HAQ	HOUSLEAD	PLACE SP LIVES HAS- LEAD PAINT OR PIPES
<b>HHCHAR</b>	HAQ	HOUSHEAT	PLACE SP LIVES HAS- NO HEAT
<b>HHCHAR</b>	HAQ	HOUSCOOL	PLACE SP LIVES HAS- NO COOLING SYSTEM
<b>HHCHAR</b>	HAQ	HOUSOVEN	PLACE SP LIVES HAS- NO WORKING OVEN/STOVE
<b>HHCHAR</b>	HAQ	HOUSSMOK	PLACE SP LIVES HAS- NO WORKING SMOKE DETECTORS
<b>HHCHAR</b>	HAQ	HOUSWATR	PLACE SP LIVES HAS- WATER LEAKS
<b>HHCHAR</b>	HAQ	SPOUSJOB	SP'S SPOUSE/PARTNER IN THE HOUSEHOLD HAS A JOB
<b>INTERV</b>	N/A	INTDUR	DURATION OF INTERVIEW IN MINUTES
<b>MCREPLNQ</b>	KNQ	COMPDESK	OWN/USE A DESKTOP/LAPTOP COMPUTER
<b>MCREPLNQ</b>	KNQ	COMPPHON	OWN/USE A SMARTPHONE
<b>MCREPLNQ</b>	KNQ	COMPTAB	OWN/USE A TABLET/PORTABLE COMPUTER
<b>MCREPLNQ</b>	KNQ	AUDIOVID	USE VIDEO OR VOICE CALLS
<b>MENTHLTH</b>	HFQ	SOCISOLA	HOW OFTEN SP FELT LONELY IN LAST 12 MONTHS
<b>MYENROLL</b>	N/A	ENROLYR	IDENTIFIES THE DATA SOURCE YEAR (1 OF THE 5 MULTIPLE YEARS)
<b>MYENROLL</b>	N/A	H_DUAL01-12	5 YEAR ENROLLMENT FILE MONTHLY FLAG: DUAL ELIGIBILITY STATUS
<b>MYENROLL</b>	N/A	H_MAFF01-12	5 YEAR ENROLLMENT FILE MONTHLY FLAG: MEDICARE ENROLLMENT STATUS
<b>MYENROLL</b>	N/A	H_PDLS01-12	5 YEAR ENROLLMENT FILE MONTHLY FLAG: MEDICARE ENROLLMENT LOW-INCOME SUBSIDY (LIS) INDICATOR
<b>MYENROLL</b>	N/A	H_PTD01-12	5 YEAR ENROLLMENT FILE MONTHLY FLAG: MEDICARE PART D ENROLLMENT STATUS
<b>MYENROLL</b>	N/A	PTA_MONS	NUMBER OF MONTHS SP HAD MEDICARE PART A COVERAGE
<b>MYENROLL</b>	N/A	PTB_MONS	NUMBER OF MONTHS SP HAD MEDICARE PART B COVERAGE
<b>VISHEAR</b>	HFQ	CATAREVR	EVER TOLD HAD CATARACTS
<b>VISHEAR</b>	HFQ	CATAROPC	SP EVER HAD OPERATION FOR CATARACTS?
<b>VISHEAR</b>	HFQ	EYESURG	SP EVER HAD LASER EYE SURGERY
<b>VISHEAR</b>	HFQ	GLCOMEVR	EVER TOLD HAD GLAUCOMA
<b>VISHEAR</b>	HFQ	MACULEVR	EVER TOLD MACULAR DEGENERATION
<b>VISHEAR</b>	HFQ	RETINEVR	EVER TOLD DIABETIC RETINOPATHY

**Weighting:**

New Topical weights are provided for the release of Winter 2022 TLQ data (TELEMED) and Winter 2022 and Summer 2022 CVQ data (COMMDOSE) in the 2021 Survey File LDS. Three sets of full-sample and replicate cross-sectional weights were derived from nonresponse-adjusted weights for each segment.

**Imputation:**

The imputation of missing costs and payments was improved for MA beneficiaries in the 2021 LDS. Payment from both MA and Medicare FFS for the same medical event are no longer present.

The 2021 LDS also accounts for the suspension of sequestration due to the COVID-19 pandemic.

For more information on this imputation, see the *2021 MCBS Methodology Report*.

## 4. SURVEY OVERVIEW

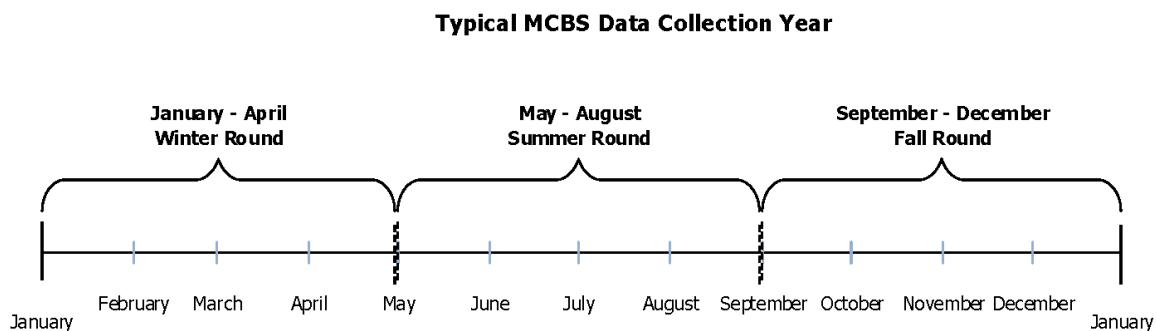
### 4.1 Design of MCBS

In its initial design, the MCBS was to serve as a traditional longitudinal survey of the Medicare population. There was no predetermined limit to the duration of time a beneficiary, once selected to participate, was to remain in the sample. However, this was later determined to be impractical, and beginning in 1994, participation of beneficiaries in the MCBS was limited to no more than four years.

Although limited to a four-year period, MCBS data collection is continual 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 primary reason for the round by round configuration (rather than interviewing on an annual basis) is to have shorter periods of recall during the year in order to capture more complete health care costs and utilization from beneficiaries.

The 2021 MCBS data releases reflect data collected from January 2021 through December 2021, as well as data on income and assets, access to care, usual source of care, preventive care, COVID-19, beneficiary knowledge and information needs, drug coverage, and chronic pain information collected through the Winter and Summer 2022 rounds.<sup>17</sup> Exhibit 4.1.1 depicts an MCBS data collection year and the typical span of the rounds.

**Exhibit 4.1.1:** Typical MCBS Data Collection Year



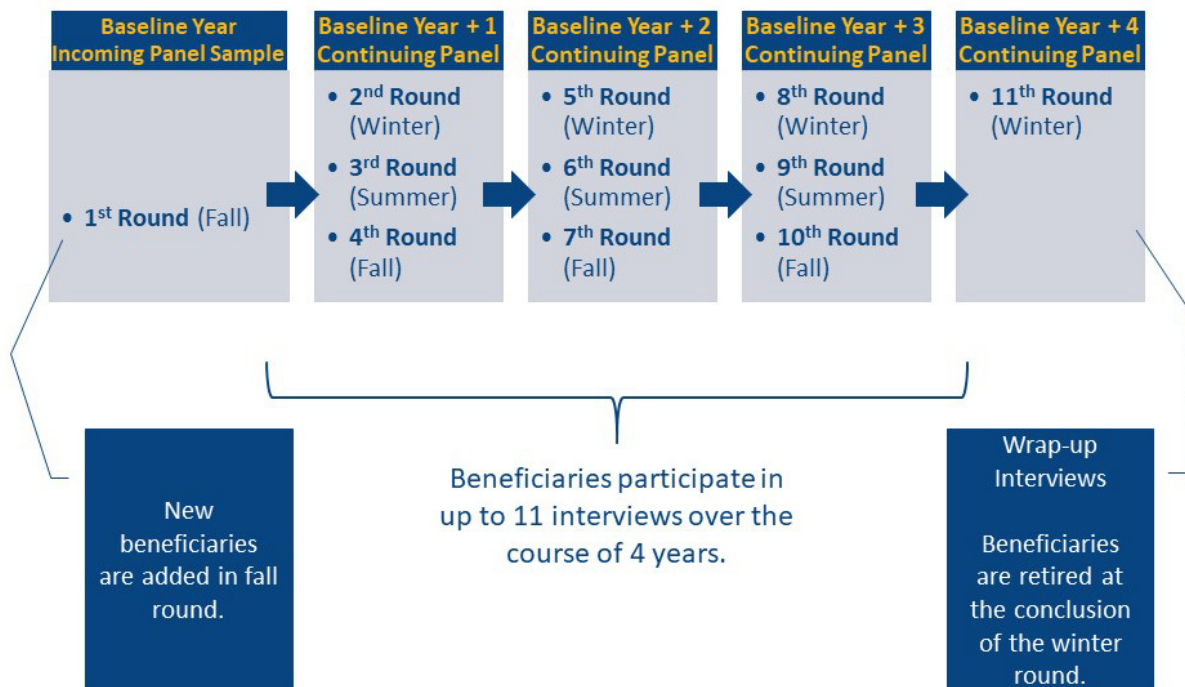
Initial interviews of newly selected beneficiaries take place in the fall round. Since 2016, the fall round begins early in late July or early August to allow more time to conduct outreach and collect information from the new survey respondents who are selected to participate in the MCBS. That is, the early start of the fall round overlaps with the final weeks of data collection for the summer round. These small overlap periods as one round ends and another begins are acceptable design features of the survey.

Subsequent rounds, which occur every four months, involve re-interviewing of the same beneficiary (or appropriate proxy respondents or Facility staff) until they have completed four years of participation (up to 11 interviews in total). Interviews are conducted regardless of whether the beneficiary resides at home or in a long-term care facility, using a questionnaire version appropriate to the setting. Exhibit 4.1.2 depicts the timeline of participation for beneficiaries selected to be in the MCBS sample and Appendix B provides a list of all rounds by data collection year. The MCBS does not currently administer physical exams. However,

<sup>17</sup> Due to the nature of some survey items, LDS data for each data year may include data pulled forward from a prior data collection year and/or data added from a future data collection year due to the specific reference period. Please refer to Exhibits 5.2.3 and 5.2.8 for more information.

beginning in 2023, the MCBS will implement new physical measures with additions to the Survey File LDS in the future.

#### Exhibit 4.1.2: MCBS Beneficiary Participation Timeline



## 4.2 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.<sup>18</sup> Each MCBS panel, an annual statistical sample of all Medicare enrollees, is interviewed up to three times a year over a four-year period, creating a continuous profile of selected beneficiaries' health care experiences.<sup>19</sup> One panel is retired at the conclusion of each winter round, and a new panel is selected to replace it each fall round (see Exhibit 4.2). The size of the new panel is designed to provide a stable number of beneficiaries across all panels participating in the survey annually. Please see Section 6: Sampling for more information on the sample design selection.

<sup>18</sup> 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.

<sup>19</sup> 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.

**Exhibit 4.2:** 2017-2021 MCBS Rotating Panel Design

Data Collection Schedule			Panel				
Calendar Year	Season	Round#	2017	2018	2019	2020	2021
2017	Winter	77					
	Summer	78					
	Fall	79					
2018	Winter	80					
	Summer	81					
	Fall	82					
2019	Winter	83					
	Summer	84					
	Fall	85					
2020	Winter	86					
	Summer	87					
	Fall	88					
2021	Winter	89					
	Summer	90					
	Fall	91					

### 4.3 Case Types

MCBS respondents are classified by their phase of participation (i.e., Incoming or Continuing) and interview participation (i.e., Community or Facility), which is determined by residence status. These case types are described below.

#### 4.3.1 Incoming and Continuing Cases

Every fall, a new panel of sampled beneficiaries is added to the total sample to replace the panel of beneficiaries completing a final interview and exiting the MCBS in the prior winter round. Newly selected beneficiaries who begin in the fall round are referred to as Incoming Panel cases. After the initial interview, they are referred to as Continuing cases.

#### 4.3.2 Community Interviews and Facility Interviews

Approximately 93 percent of the interviews are held with beneficiaries or proxies who are living in their own residence or with family or friends. These interviews are called Community interviews; the remaining 7 percent of the interviews are for beneficiaries living in a facility. Over the course of a four-year period, it is not uncommon for beneficiaries to enter long-term care facilities (e.g., nursing homes) or to go back and forth between the community and a facility setting (these cases are called Crossovers). In order to obtain an accurate representation of the experiences of all Medicare beneficiaries, the MCBS includes beneficiaries wherever they reside, even if they reside in and/or enter a facility for the duration of their four years with the study. The MCBS does not conduct Facility interviews with the beneficiary directly; instead, specially trained Facility interviewers administer the survey to Facility administrative staff.

For more information about MCBS data collection procedures and interviewing, see the *2021 MCBS Methodology Report*.

## 4.4 Completed Interviews

Exhibit 4.4 lists the number of completed interviews for the Fall 2021 Continuing (2018, 2019, and 2020) and Incoming (2021) Panels by age strata. Under the rotating panel design, the beneficiaries selected in Fall 2017 exited the study at the conclusion of the Winter 2021 round.

**Exhibit 4.4:** 2021 MCBS Fall Round Completed Interviews: Continuing and Incoming Panels

<b>Age Category as of 12/31/2021</b>	<b>2018 Panel</b>	<b>2019 Panel</b>	<b>2020 Panel</b>	<b>2021 Panel</b>	<b>Total</b>
<b>Under 45 years</b>	167	223	187	414	991
<b>45-64 years</b>	160	212	389	609	1,370
<b>65-69 years</b>	205	353	553	1,167	2,278
<b>70-74 years</b>	458	440	579	847	2,324
<b>75-79 years</b>	350	402	576	897	2,225
<b>80-84 years</b>	333	355	582	971	2,241
<b>85+ years</b>	424	459	605	884	2,372
<b>Total</b>	2,097	2,444	3,471	5,789	13,801

SOURCE: 2021 MCBS Internal Sample Control File

## 5. QUESTIONNAIRES

### 5.1 Overview

The MCBS Questionnaire structure features two components (Community and Facility), administered based on the beneficiary's residence status. Within each component, the flow and content of the questionnaire varies by interview type and data collection season (fall, winter, or summer). There are two types of interviews (Baseline and Continuing) containing two types of questionnaire sections (Core and Topical). The beneficiary's residence status determines which questionnaire component is used and how it is administered. See Exhibit 5.1 for a depiction of the MCBS Questionnaire structure.

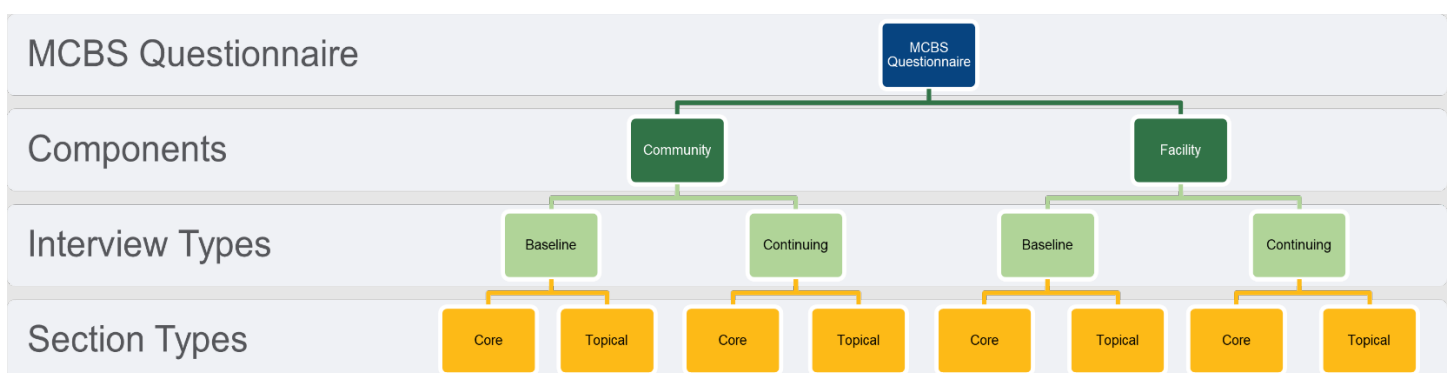
- **Community Component:** Survey administered to beneficiaries living in the community (i.e., not in a long-term care facility such as a nursing home) during the reference period covered by the MCBS interview. An interview may be conducted with the beneficiary or a proxy.
- **Facility Component:** Survey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

Within each component, there are two types of interviews – a Baseline interview and a Continuing interview.

- **Baseline:** The initial questionnaire administered in the fall round of the year the beneficiary is selected into the sample (interview #1).
- **Continuing:** The questionnaire administered as beneficiaries progress through the study (interviews #2-11).

Depending on the interview type and data collection season (fall, winter, or summer), the MCBS Questionnaire includes Core and Topical sections. See Sections 5.2 and 5.3 for tables of the 2021 Core and Topical sections.

**Exhibit 5.1:** MCBS Questionnaire Overview



#### 5.1.1 Items from Validated Scales

The MCBS questionnaire contains content from a variety of sources that are adapted for inclusion in the MCBS. Some questionnaire items on the MCBS come from validated scales that were developed by external researchers and tested for reliability and validity. Two examples of such scales are the Generalized Anxiety Disorder Scale (GAD-2), which is a screening tool for generalized anxiety disorder (see MCBS Community items



HFGAD1 and HFGAD2) and the Patient Health Questionnaire (PHQ-9), which is a screening tool for depression (see MCBS Community items HFPHQ1 through HFPHQ8 and PHQ9QS10).

## 5.2 Community Questionnaire

The content of the MCBS Community Questionnaire consists of Core and Topical sections. Core survey content is grouped into questionnaire sections that collect data central to the policy goals of CMS. These sections collect information related to socio-demographics, health insurance coverage, health care utilization and costs, beneficiary health status, and experiences with care, as well as operational and procedural data. The questionnaire sections in each of these categories may be asked each round or seasonally (fall, winter, summer). Data from these questionnaire sections are found in the Survey File and Cost Supplement File data releases. In addition to the Core content, there are several Topical questionnaire sections that capture data on a variety of key topics that relate to the beneficiary's housing characteristics, health behaviors, knowledge about Medicare, and health-related decision making. All data from the Topical sections are included in the Survey File data release.

Different combinations of Core and Topical sections are used depending on a number of criteria, including interview type (Baseline vs. Continuing); the season of data collection (fall, winter, summer); whether the beneficiary is alive, deceased, or in a facility; and whether the interview is being completed with the beneficiary or a proxy.

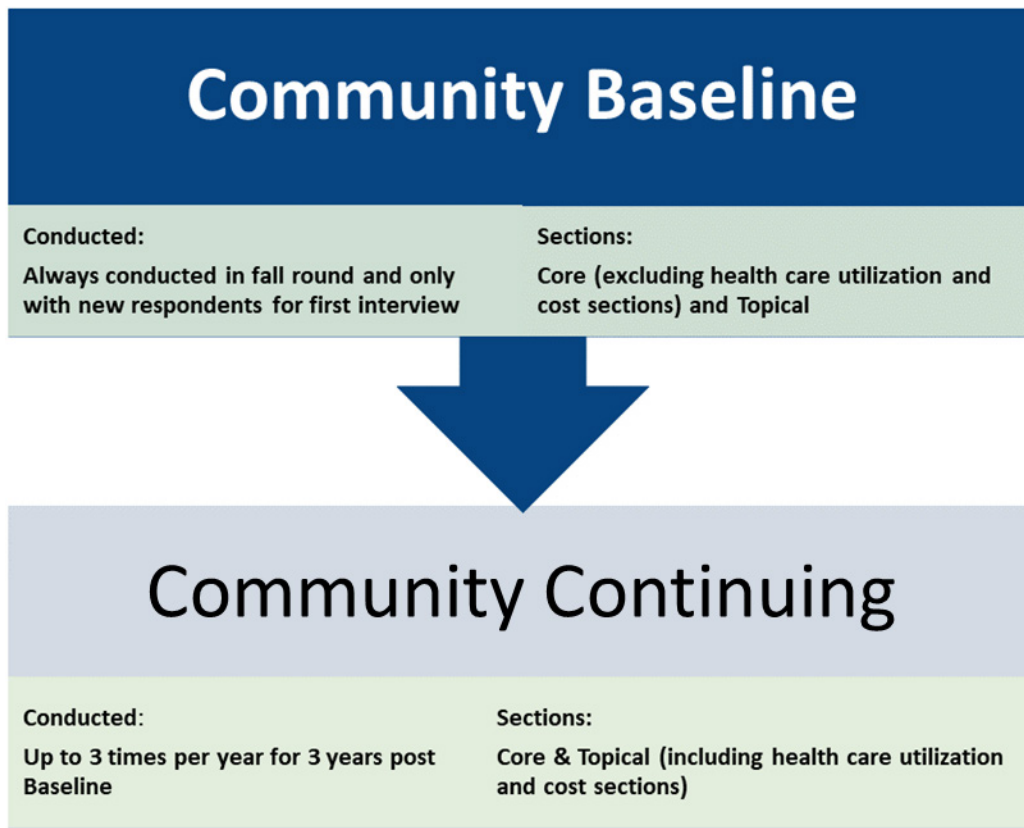
The first Community interview conducted with Incoming Panel respondents is referred to as the Baseline interview. This interview is always conducted in the fall round and consists of a combination of Core and Topical sections. It is important to note that this first interview does not include Core sections that collect health care utilization and cost data. The respondent's 2<sup>nd</sup> through 11<sup>th</sup> interviews, also known as the Continuing interviews, consist of Core and Topical sections, including those that collect health care utilization and cost data; these interviews provide three calendar years of reported health care utilization and cost data for each beneficiary.

**The Community questionnaire consists of the following components (see Exhibit 5.2):**

- **Community Baseline questionnaire**
- **Community Continuing questionnaire**

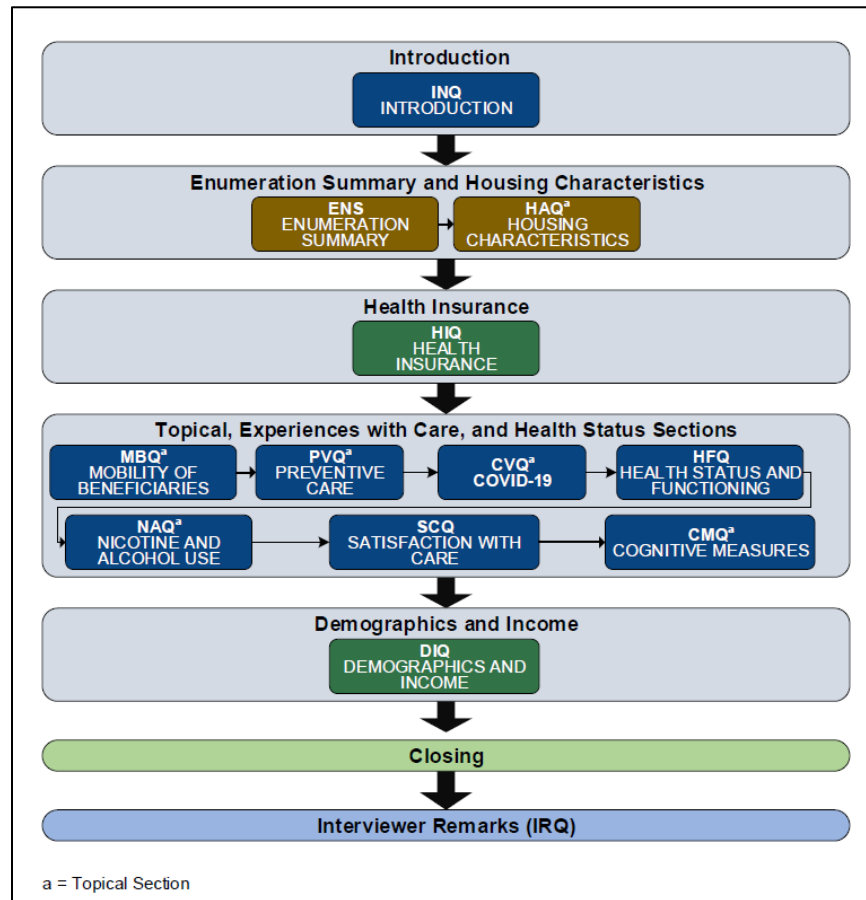
In addition to including data collected in the three rounds (winter, summer, and fall) administered during the calendar year (i.e., January 2021 through December 2021), some data collected in the previous and following calendar years are also included in the 2021 LDS. Specifically, some data collected in 2020 are carried forward to fill in data for 2021 when questionnaire items are administered only once or when data are missing for the data year but valid values exist for the previous year. Some data are also collected in Winter and Summer 2022 and are "pulled back" for inclusion in the 2021 LDS because the section's reference period extends back to 2021; these sections are specified further below.

In this section, data users should note that exhibit titles will indicate either the *data collection year*, which refers to the three rounds (winter, summer, and fall) that occur within the calendar year, or the *data year*, which refers to the data collected over the three years that are included in the LDS.

**Exhibit 5.2:** Overview of the MCBS Community Questionnaire Components

### 5.2.1 Baseline Interview

As the first interview conducted, the Baseline interview provides an opportunity for the field interviewer to develop a strong rapport and connection with the respondent, acquaint the respondent with the intent of the survey, and emphasize the importance of keeping accurate records of medical care and expenses. Whenever possible, field interviewers are assigned to the same beneficiary over the course of their participation in the survey, so establishing a positive relationship is critical during the Baseline interview. Exhibit 5.2.1 depicts the sections and flow of the Community Baseline interview for the 2021 calendar year, which is synonymous with the 2021 data year for Baseline cases.

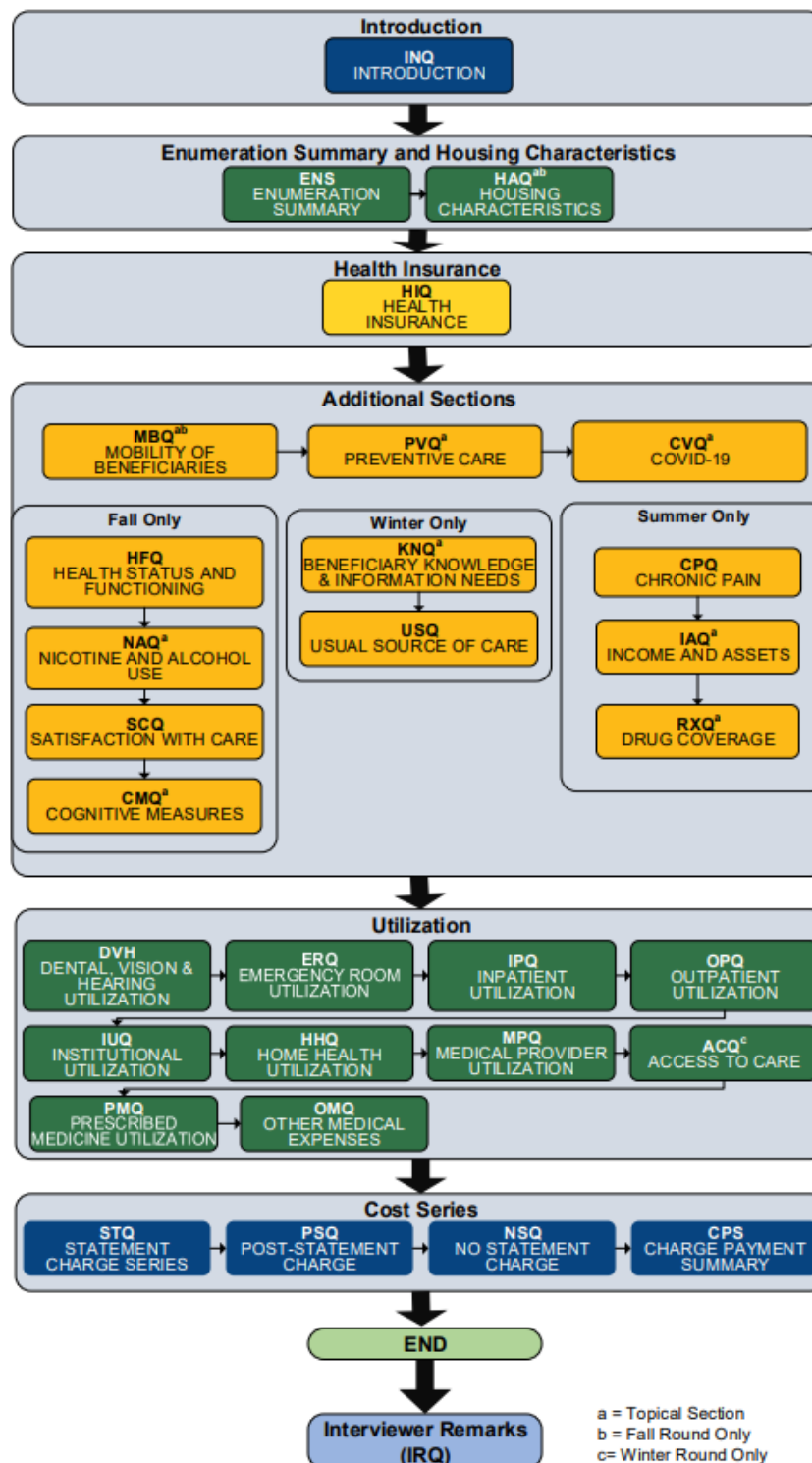
**Exhibit 5.2.1:** 2021 Data Collection Year MCBS Community Questionnaire Flow for Baseline Interview

### 5.2.2 Continuing Interview

The Continuing interview consists of Core sections that focus on the use of medical services and the resulting costs; these sections are asked in essentially the same way each and every time they are administered. The respondent is asked about new health events and to complete any partial information that was collected in the last interview. For example, the respondent may mention a doctor visit during the health care "utilization" part of the interview. In the "cost" section, the field interviewer will ask if there are any receipts or statements from the visit. If the answer is "yes", the field interviewer will record information about the costs from those statements, but if the answer is "no," the question will be stored until the next interview. The Continuing interview also includes sections about health insurance. During each interview, the respondent is asked to verify ongoing health insurance coverage and to report any new health insurance plans.

Continuing interviews also include Topical sections which cover subjects such as mobility or drug coverage. Exhibit 5.2.2 depicts the sections and flow of the Community Continuing interview for the data collection year, rather than the data year, meaning interviews conducted in 2021 used the flow depicted. The data year includes surveys administered in other years which may have slightly different questionnaire flows but are included in the data year LDS given the reference period. To continue to prioritize the collection of seasonal section data and facilitate telephone data collection in response to the COVID-19 pandemic, the questionnaire order was maintained to administer the seasonal sections after Health Insurance (HIQ) and before all utilization and Cost Series sections in 2021.

All sections are considered "Core" sections unless otherwise noted.

**Exhibit 5.2.2:** 2021 Data Collection Year MCBS Community Questionnaire Flow for Continuing Interview**5.2.3 Core Questionnaire Sections**

Each Core section of the Community Questionnaire is described below, organized by topic of information collected. New respondents receiving the Baseline interview do not receive Core sections about health care utilization and costs; these sections are reserved for Continuing respondents. As such, in Fall 2021, only

persons in the 2018, 2019, and 2020 Panels received the Core sections about health care utilization and health care costs. All panels received the health insurance section. Exhibit 5.2.3 displays the Core Community questionnaire sections that are included in the Survey File and the Cost Supplement File.

**Exhibit 5.2.3:** 2021 Data Year MCBS Community Core Sections by Data File and Data Collection Schedule\*

Section Group	Abbr.	Section Name	LDS <sup>§</sup>	Data Collection Schedule
<b>Socio-Demographics</b>	IAQ	Income and Assets	SF	Summer 2022**
	DIQ	Demographics/Income	SF	Fall 2021, Baseline Interview
<b>Health Insurance</b>	HIQ	Health Insurance	SF	All Seasons
<b>Utilization</b>	DVH	Dental, Vision and Hearing Care Utilization	CS	All Seasons
	ERQ	Emergency Room Utilization	CS	All Seasons
	IPQ	Inpatient Hospital Utilization	CS	All Seasons
	OPQ	Outpatient Hospital Utilization	CS	All Seasons
	IUQ	Institutional Utilization	CS	All Seasons
	HHQ	Home Health Utilization	CS	All Seasons
	MPQ	Medical Provider Utilization	CS	All Seasons
	OMQ	Other Medical Expenses Utilization	CS	All Seasons
	PMQ	Prescribed Medicine Utilization	CS	All Seasons
<b>Cost</b>	STQ	Statement Cost Series	CS	All Seasons
	PSQ	Post-Statement Charge	CS	All Seasons
	NSQ	No Statement Charge	CS	All Seasons
	CPS	Charge Payment Summary <sup>‡</sup>	CS	All Seasons
<b>Experiences with Care</b>	ACQ	Access to Care	SF	Winter 2022**
	SCQ	Satisfaction with Care	SF	Fall 2021
	TLQ	Telemedicine	SF	Winter 2022**
	USQ	Usual Source of Care	SF	Winter 2022**
<b>Health Status</b>	HFQ	Health Status and Functioning	SF	Fall 2021
	CMQ	Cognitive Measures	SF	Fall 2021

SOURCE: MCBS Community Questionnaire

\*Certain procedural or operational management sections are collected specifically to manage the data collection process. These sections are not directly included in the LDS files (e.g., Introduction (INQ), Enumeration (ENS), and Interview Remarks (IRQ)).

\*\*These sections are administered in the summer or winter rounds following the current data year given that the reference period is the prior year and data are included in the prior year data files. For guidance on analyzing data from these sections, see Section 9.4.2.

‡Summary sections: Updates and corrections are collected through the summary sections. The respondent is asked to verify summary information gathered in previous interviews. Changes are recorded if the respondent reports information that differs from what was previously recorded.

§Limited Data Set (LDS) indicates the file where the questionnaire data appears (i.e., SF = Survey File, CS = Cost Supplement File).

## Socio-Demographics

Two sections in the Community Questionnaire capture key socio-demographic characteristics of the beneficiary.

The **Demographics and Income (DIQ)** section includes traditional demographic items such as Hispanic origin, race, English proficiency, education, and total household income. This section is administered during the Baseline interview.

**Income and Assets (IAQ)** is a summer round section that collects detailed information about income and assets of the beneficiary and spouse or partner (if applicable). IAQ covers beneficiary (and spouse/partner) income from employment, Social Security, Veteran's Administration, and pensions. The respondent is also asked to indicate the value of the beneficiary's (and spouse's/partner's) assets including retirement accounts, stocks, bonds, mutual funds, savings accounts, businesses, land or rental properties, and automobiles. Also included in this section are items about homeownership or rental status and food security. IAQ collects information about the previous calendar year; thus, income and assets information collected in Summer 2022 (for the 2021 calendar year) are included in the 2021 LDS.

## Health Insurance

The Community Questionnaire captures health insurance information each round.

**Health Insurance (HIQ)** records all health insurance plans that the beneficiary has had since the beginning of the reference period. The survey prompts for coverage under each of the following types of plans: Medicare Advantage, Medicaid, TRICARE, non-Medicaid public plans, Medicare Prescription Drug Plans, and private (e.g., Medigap or supplemental) insurance plans. Detailed questions about coverage, costs, and payment are included for Medicare Advantage, Medicare Prescription Drug, and private insurance plans.

## Utilization

The utilization sections of the questionnaire capture health care use by category. Generally, four types of health care utilization are recorded: provider service visits, home health care, other medical expenses, and prescribed medicines. Provider service visits include visits to dental, hearing, and vision care providers; emergency rooms; inpatient and outpatient hospital departments; institutional stays; and medical providers. In these sections, visits are reported as unique events by date, although in cases where there are more than five visits to a single provider during the reference period, the events are entered by month with the number of visits specified. A slightly different reporting structure is used for home health care, other medical expenses, and prescribed medicines.

All utilization sections are administered in all Community Continuing interviews; these sections are not part of the Incoming Panel's Baseline interview. Additional detail is provided on each of the four types of health care utilization collected by the Community Questionnaire below.

### Provider Service Visits

The utilization sections collecting provider service dates are as follows.

**Dental, Vision, and Hearing Care Utilization (DVH)** collects information about dental, vision, and hearing care visits during the reference period as well as other medical expenses such purchases or repairs of glasses and hearing devices. DVH collects the name and type of dental, vision, and hearing care providers; dates of visits; services performed; medicines prescribed during the visits; and any purchases or repairs of glasses and hearing devices. This section replaced the Dental Utilization Questionnaire (DUQ) section from 2018 and earlier.

**Emergency Room Utilization (ERQ)** records visits to hospital emergency rooms during the reference period. ERQ collects the names of the hospitals, dates of visits, whether the visit was associated with a particular condition, and medicines prescribed during the visits. If a reported emergency department visit resulted in hospital admission, an inpatient visit event is created, with follow up questions asked in the Inpatient Utilization section.

**Inpatient Utilization (IPQ)** collects information about inpatient stays during the reference period. IPQ collects the names of the hospitals, beginning and end dates of the stays, whether surgery was performed, whether the visit was associated with a particular condition, and medicines prescribed to be filled upon discharge from the hospital (medicines administered during the stay are not listed separately). Inpatient stays resulting from emergency room admissions are also covered.

**Outpatient Hospital Utilization (OPQ)** prompts for visits that the beneficiary may have made to hospital outpatient departments or clinics during the reference period. OPQ collects the name of the outpatient facility, dates of visits, whether surgery was performed, whether the visit was associated with a particular condition, and medicines prescribed during the visits.

**Institutional Utilization (IUQ)** collects information about stays in nursing homes or any similar facility during the reference period. IUQ collects the name of the institution(s) and the dates the beneficiary was admitted and discharged from the institution(s).

**Medical Provider Utilization (MPQ)** collects information about medical provider visits during the reference period. In addition to physicians and primary care providers, this includes visits with health practitioners that are not medical doctors (acupuncturists, chiropractors, podiatrists, homeopaths, naturopaths), mental health professionals, therapists (including speech, respiratory, occupational, and physical therapists), and other medical persons (nurses, nurse practitioners, paramedics, and physician's assistants). MPQ collects names and types of providers, dates, whether the visit is associated with a particular condition, and medicines prescribed during the visit.

### Home Health Care Visits

**Home Health Utilization (HHQ)** collects information about home health provider visits from both professional and non-professional providers, during the reference period. HHQ collects names and types of home health providers, dates of visits, and services performed during visits.

### Prescribed Medicines

The **Prescribed Medicine Utilization (PMQ)** section collects details about prescribed medicines obtained during the reference period. For medicines recorded in the provider service visit sections (in the context of those visits), PMQ collects the medicine strength, form, quantity, and number of purchases. Medicines that were not previously reported during the course of the provider service visit utilization sections, including those that are refilled or called in by phone, are also collected in this section. Unlike for provider service visits, event dates are not collected for prescribed medicines. Instead, the interviewer records the number of purchases or refills. Information is not collected about non-prescription medicines and prescriptions that are not filled.

### Other Medical Expenses

The Community Questionnaire also records other medical expenses. These expenses are reported using a slightly different reporting structure within the questionnaire. The reporting structure used to capture other medical expenses within the questionnaire differs slightly than that used for capturing provider services events. For example, as opposed to capturing details about a visit to a provider (e.g., provider name, date of visit, etc.), the questionnaire records the date(s) the beneficiary rented, purchased, or repaired each type of medical equipment.



**Other Medical Expenses Utilization (OMQ)** collects information about medical equipment and other items (excluding prescriptions) that the beneficiary purchased, rented, or repaired during the reference period. Other medical expenses include orthopedic items (wheelchairs, canes, etc.), diabetic equipment and supplies, dialysis equipment, prosthetics, oxygen-related equipment and supplies, ambulance services, other medical equipment (beds, chairs, disposable items, etc.) and alterations to the home or car. For each item, the date(s) of rental, purchase, or repair are recorded. For disposable medical items (e.g., bandages), the number of purchases is collected, rather than a date.

Data collected in the utilization sections are released with the Cost Supplement File LDS. See the *Cost Supplement File: Data User's Guide* for more information.

## Cost Series

Once all utilization sections are completed, the questionnaire flows to the cost series, wherein the costs of all reported visits and purchases are recorded, along with the amount paid by various sources. Importantly, additional visits and purchases not reported in the utilization sections of the questionnaire could be recorded within the cost series, and all corresponding data for those events are collected within the cost series.

The cost series consists of four sections: Statement, Post-Statement, No Statement, and Charge Payment Summary. Each is summarized in Exhibit 5.2.4 and described below.

### Exhibit 5.2.4: Cost Series Section Overview

Statement Series (STQ)	Post-Statement Series (PSQ)
Collect cost information from: <ul style="list-style-type: none"> <li>• Medicare</li> <li>• Insurance</li> <li>• TRICARE</li> <li>• Drug plan statements</li> </ul>	Collect costs for "rent-to-buy" items <ul style="list-style-type: none"> <li>• Only administered to a small percentage of respondents</li> </ul>
No Statement Series (NSQ)	Charge Payment Summary (CPS)
Collect information from: <ul style="list-style-type: none"> <li>• Bills</li> <li>• Receipts</li> <li>• Invoices</li> </ul>	Collect information on outstanding charges from: <ul style="list-style-type: none"> <li>• Statement paperwork</li> <li>• Non-statement paperwork</li> </ul>

The **Statement Cost Series section (STQ)** collects medical cost information directly from Medicare Summary Notices (MSNs), insurance explanations of benefits (EOB), Prescription Drug Plan statements, and TRICARE or other insurance statements. In cases where the beneficiary had more than one payer (e.g., Medicare and private insurance), interviewers organize statements into charge bundles, which are driven by the claim total on an MSN or EOB and may include one or more utilization events (visits, medicines, or purchases). Each charge bundle is entered separately, and all previously reported events associated with the charge bundle are linked to the cost record. Payment details are entered from the statements and any remaining amount not accounted for is confirmed with the respondent. This process is repeated for all available, not previously recorded insurance statements containing events that occurred within the survey reference period (roughly the past year).



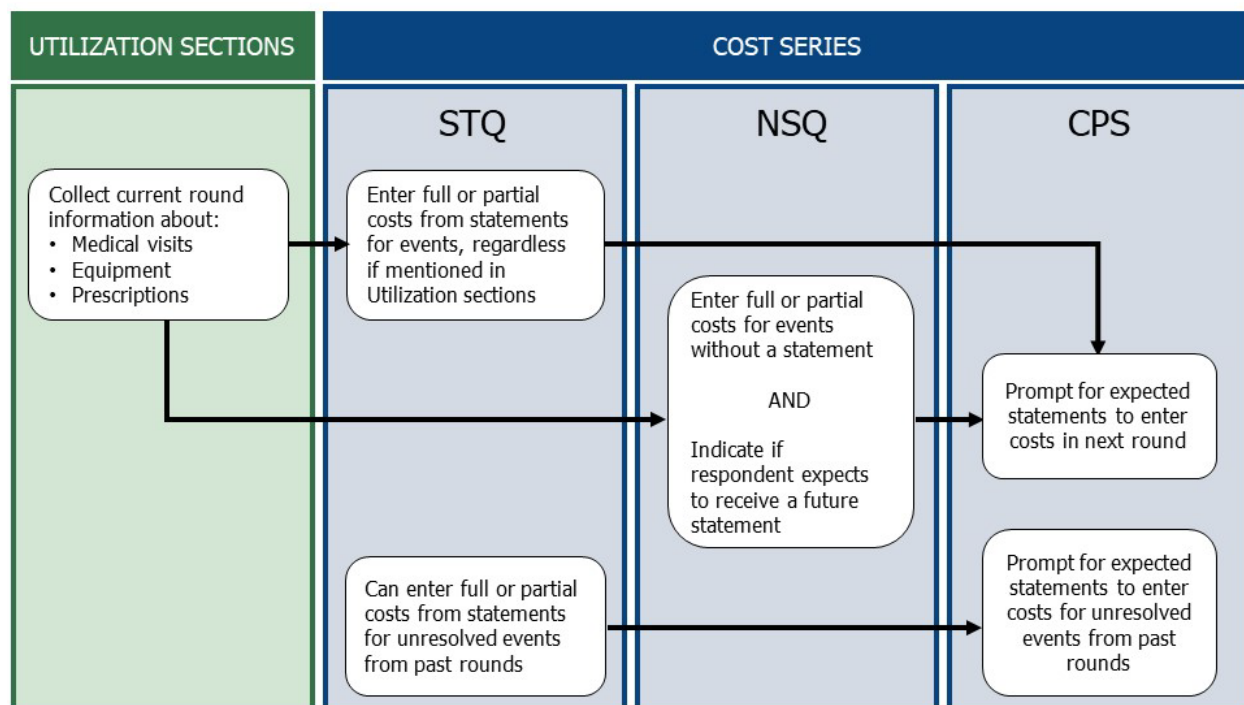
The **Post-Statement Charge section (PSQ)** facilitates cost data collection for rental items that span multiple rounds of interviews (such as a long-term wheelchair rental) and for which cost data has not yet been reported.

The **No Statement Charge section (NSQ)** prompts for cost data for all events that do not have a Medicare, insurance, or TRICARE statement reported in the current round. This section attempts to capture cost data even in absence of insurance statements. The respondent may refer to non-statement paperwork such as bills or receipts to help collect accurate cost information. NSQ loops through a series of cost verification items for each event or purchase reported during the current round utilization but not already linked to a cost record via the Statement section. If respondents indicate a statement for the event is expected, then the NSQ items are bypassed.

The final cost series section, the **Charge Payment Summary (CPS)**, reviews outstanding cost information reported within the last two rounds. For example, if the respondent reported in the previous interview that he/she expected to receive an insurance statement for a particular event, then this event is carried forward to CPS in the next round. Any charge bundle for which costs are not fully resolved is asked about in the next round's CPS section. There are a variety of reasons a cost record might qualify to be asked about in CPS (referred to as "CPS Reasons"). For example, a respondent may have been expecting to receive a statement related to the event or may have reported payments that account for only part of the total charge. The amount of information collected in CPS and the path through the section is determined by the CPS reason for the cost record. One case can have multiple cost records flagged for CPS with a variety of CPS reasons. The questionnaire loops through each eligible cost record in an attempt to collect further cost data.

The flow of sections and questions within the cost series varies depending on data collected in the current round (e.g., whether the beneficiary had a health insurance statement for a visit reported in the current round) and data collected in prior rounds (i.e., whether there was outstanding cost information reported from a prior round). Exhibit 5.2.5 illustrates how paths through these sections may vary depending on health care utilization and cost information collected in the current and previous rounds.









**Exhibit 5.2.5:** Utilization and Cost Section Flow



Costs are considered unresolved when full cost information is not collected due to events being reported 1) without any cost or payment information, 2) with an indication that a statement is expected, so follow-up questions about costs and payments are deferred until the next interview, or 3) with partial information about costs or payments, but there is a remaining dollar amount with pending payment information.

























The current MCBS protocol allows for cost resolution attempts up to two rounds later than the events were reported. Exhibit 5.2.6 displays sample paths to resolving cost information. The first row displays a hospital event reported with costs and statement. This cost is resolved within the round. The second row displays a resolved dental event reported in the summer round with the statement provided in the fall round. The third row displays a prescription medicine event reported with a statement in the summer and resolved in the winter after the statement was provided. The final row displays an unresolved event that was reported in the summer round but did not receive cost or statement verification.

**Exhibit 5.2.6:** Example Paths Toward Cost Resolution

Scenario	Summer Round	Fall Round	Winter Round	Cost Status
Event reported with costs, statement available	 			<b>Resolved</b>
Event reported without costs, awaiting statement				<b>Resolved</b>
Event reported with receipt, awaiting statement	 			<b>Resolved</b>
Event reported without costs, statement not received				<b>Unresolved</b>

The 2021 data year includes 2021 events collected from Winter 2021 through Summer 2022 (see Exhibit 5.2.7). The unresolved costs are indicated with a red circle-backslash symbol and are unresolved given that the statement was not received.

**Exhibit 5.2.7:** Events Collected in the 2021 Data Year

Winter 2021 (R89)	Summer 2021 (R90)	Fall 2021 (R91)	Winter 2022 (R92)	Summer 2022 (R93)
 →   →   → 	 →   →   → 	 →   →   → 	 →   → 	 

Data collected in the cost series are released with the Cost Supplement File LDS. See the *Cost Supplement File: Data User's Guide* for more information.

## Experiences with Care

Four sections cover the beneficiary's experience with care in various medical settings.

**Access to Care (ACQ)** is administered in the winter round for Continuing respondents and focuses on the beneficiary's experience with particular types of medical encounters (hospital emergency room, hospital clinic or outpatient department, long-term care facility, or medical doctor visits) during the reference period. If the beneficiary had one or more of a particular type of medical encounter, additional items collect information about services received and waiting times associated with the most recent encounter. ACQ collects information about the previous calendar year; thus, ACQ data collected in Winter 2022 (for the 2021 calendar year) are included in the 2021 LDS.

**Satisfaction with Care (SCQ)** is part of the fall round interview for Incoming Panel and Continuing respondents and collects the respondent's opinions about the health care that the beneficiary had received. The questions refer to medical care received from all medical providers, including both doctors and hospitals.

The **Telemedicine (TLQ)** section is administered in the winter round interview for Continuing respondents who report a usual source of care in the USQ section. TLQ asks questions on the availability and utilization of telemedicine services. TLQ collects information about the previous calendar year; thus, TLQ data collected in Winter 2022 (for the 2021 calendar year) are included in the 2021 LDS.

The **Usual Source of Care (USQ)** section is administered in the winter round for Continuing respondents and collects specific information about the usual source of health care for the beneficiary as well as any specialists seen during the reference period. USQ collects information about the previous calendar year; thus, USQ data collected in Winter 2022 (for the 2021 calendar year) are included in the 2021 LDS.

## Health Status

**Health Status and Functioning (HFQ)** collects information on the beneficiary's general health status and needs. This includes specific health areas such as disabilities, vision, hearing, and preventive health measures. HFQ includes measures of the beneficiary's ability to perform physical activities, moderate and vigorous

exercise, health care maintenance and needs, and standard measures of Instrumental Activities of Daily Living (using the telephone, preparing meals, etc.), and Activities of Daily Living (bathing, walking, etc.). In addition, HFQ asks about medical diagnoses for common conditions (cancer, arthritis, hypertension, etc.). Finally, the section covers mental health conditions, falls, urinary incontinence, and a more extensive series of questions for beneficiaries with high blood pressure and diabetes.

**Cognitive Measures (CMQ)** contains four well-established cognitive measures to assess cognitive functioning among beneficiaries, including backwards counting, date naming, object naming, and president/vice president naming.

## Operational and Procedural

These sections help guide the interviewer through the interview, providing scripts for introducing and ending the interview. They also facilitate collection of information about household members to augment sample information. Data collected in these sections are not included in the Survey or Cost Supplement data files.

**Introduction (INQ)** introduces the survey and records whether the interview was completed by the beneficiary or a proxy. For interviews completed by a proxy, the introduction collects the proxy's name and relationship to the beneficiary and determines if the proxy is a member of the beneficiary's household. The introduction is part of every Community Questionnaire.

The **Closing (END)** section is administered to close the interview for all respondents. During the exit interview, this section contains additional scripts to thank the respondent for participation over the four years of the MCBS.

**Enumeration (ENS)** collects household information and a roster of persons living in the household. For each household member added to the roster, his/her relationship to the beneficiary, sex, date of birth, age, and employment status are collected. ENS is administered in all rounds except the final exit interview.

The **Interviewer Remarks Questionnaire (IRQ)** captures additional metadata about the interview, as recorded by the interviewer. This includes the length of the interview, assistance the respondent may have received, perceived reliability of the information provided during the interview, and comments the interviewer had about the interviewing situation. IRQ is administered after every interview, but it is generally completed after leaving the respondent's home, as none of the questions are directed to the respondent.

### 5.2.4 Topical Questionnaire Sections

Each Topical section is described below, organized by type of information collected. Exhibit 5.2.8 lists the Topical sections and data collection season. Note that information collected via Topical questionnaire sections is included in the Survey File only and is not included in the Cost Supplement File. In addition, some Topical questionnaire section data are collected through the summer following the current data year (i.e., IAQ, KNQ, PVQ, CPQ, CVQ, and RXQ). Annually, special non-response adjustment weights are included within certain Survey File segments for use in analysis when data are not collected within the same calendar year. Most but not all Topical questionnaire sections have corresponding Topical segments with these special non-response adjustment weights (see Exhibits 9.4.1 and 9.4.2 for more information).

**Exhibit 5.2.8:** 2021 Data Year MCBS Community Topical Sections by Data File and Data Collection Schedule

Section Group	Abbr.	Section Name	LDS*	Data Collection Schedule
Housing Characteristics	HAQ	Housing Characteristics	SF	Fall 2021
Social Determinants of Health or Health Behaviors	CPQ	Chronic Pain	SF	Summer 2022
	MBQ	Mobility of Beneficiaries	SF	Fall 2021
	NAQ	Nicotine and Alcohol Use	SF	Fall 2021
	PVQ	Preventive Care	SF	Fall 2021, Winter 2022, and Summer 2022 <sup>±</sup>
	IAQ	Food Insecurity items	SF	Summer 2022 <sup>**±</sup>
COVID-19	CVQ	COVID-19	SF	Fall 2021, Winter 2022, and Summer 2022
Knowledge and Decision Making	KNQ	Beneficiary Knowledge and Information Needs	SF	Winter 2022 <sup>±</sup>
	RXQ	Drug Coverage	SF	Summer 2022 <sup>±</sup>

SOURCE: MCBS Community Questionnaire

\*LDS indicates the file where the questionnaire data appears (i.e., SF = Survey File, CS = Cost Supplement File).

\*\*The Food Insecurity items are included within the Income and Assets Questionnaire (IAQ).

<sup>±</sup>Section is administered in a round following the current data year. The reference period for this section is the prior year and data are included in the prior year data files. For guidance on analyzing data from these sections, see Section 9.4.2.

## Housing Characteristics

**Housing Characteristics (HAQ)** collects information on the beneficiary's housing situation. This includes the type of dwelling, facilities available in the household (e.g., kitchen and bathrooms), accessibility, and modifications to the home (e.g., ramps, railings, and bathroom modifications). This section also records if the beneficiary lives in an independent or assisted living community (distinct from a nursing or long-term care facility) where services like meals, transportation, and laundry may be provided. HAQ is administered in the fall for all beneficiaries in the Community component.

## Social Determinants of Health or Health Behaviors

Some questionnaire sections record additional information about health behaviors, specifically mobility, preventive care, and nicotine and alcohol use.

**Chronic Pain (CPQ)** is a summer round section that collects information about beneficiaries' experiences with chronic pain. The CPQ begins with PAINOFTN, which asks whether or not beneficiaries experienced pain within the last three months. If so, the section asks more detailed questions about the beneficiary's experience with pain and what types of services and activities they have used to manage their pain. The CPQ section is not administered to proxy respondents. Questionnaire items were developed by the National Pain Strategy (NPS) Population Research Working Group for inclusion in federal surveys.

**Mobility of Beneficiaries (MBQ)** is a fall round section that determines the beneficiary's use of available transportation options, with a focus on reduced mobility and increased reliance on others for transportation.

The **Preventive Care (PVQ)** section collects information about beneficiaries' preventive health behaviors. Questions administered in this section vary by data collection season. In the winter round, the PVQ focuses on the influenza vaccine, while in the summer round, the PVQ asks about the shingles and pneumonia vaccines.

In the fall round, the PVQ asks whether the beneficiary has received various types of applicable preventive screenings or tests, such as a mammogram, Pap smear, or digital rectum exam. In the summer and winter rounds, PVQ collects information about the previous calendar year; thus, PVQ data collected in Winter and Summer 2022 (for the 2021 calendar year) are included in the 2021 LDS.

**Income and Assets (IAQ)** is a summer round section that collects detailed information about income and assets of the beneficiary and spouse or partner (if applicable), however it also includes items about food security. IAQ collects information about the previous calendar year; thus, food insecurity data collected in Summer 2022 (for the 2021 calendar year) are included in the 2021 LDS.

**Nicotine and Alcohol Use (NAQ)** collects information on beneficiaries' smoking behavior, including past and current use of cigarettes, cigars, "smokeless" tobacco, and e-cigarettes. It also asks about past and current drinking behavior.

## COVID-19

The **COVID-19 (CVQ)** section collects vital information on how the Medicare population is impacted by the COVID-19 pandemic. CVQ spans a number of COVID-related topics, including presumptive vaccine uptake and vaccine utilization.

## Knowledge and Decision-Making

Respondent's knowledge of Medicare and health-related decision-making is captured in the following Topical sections.

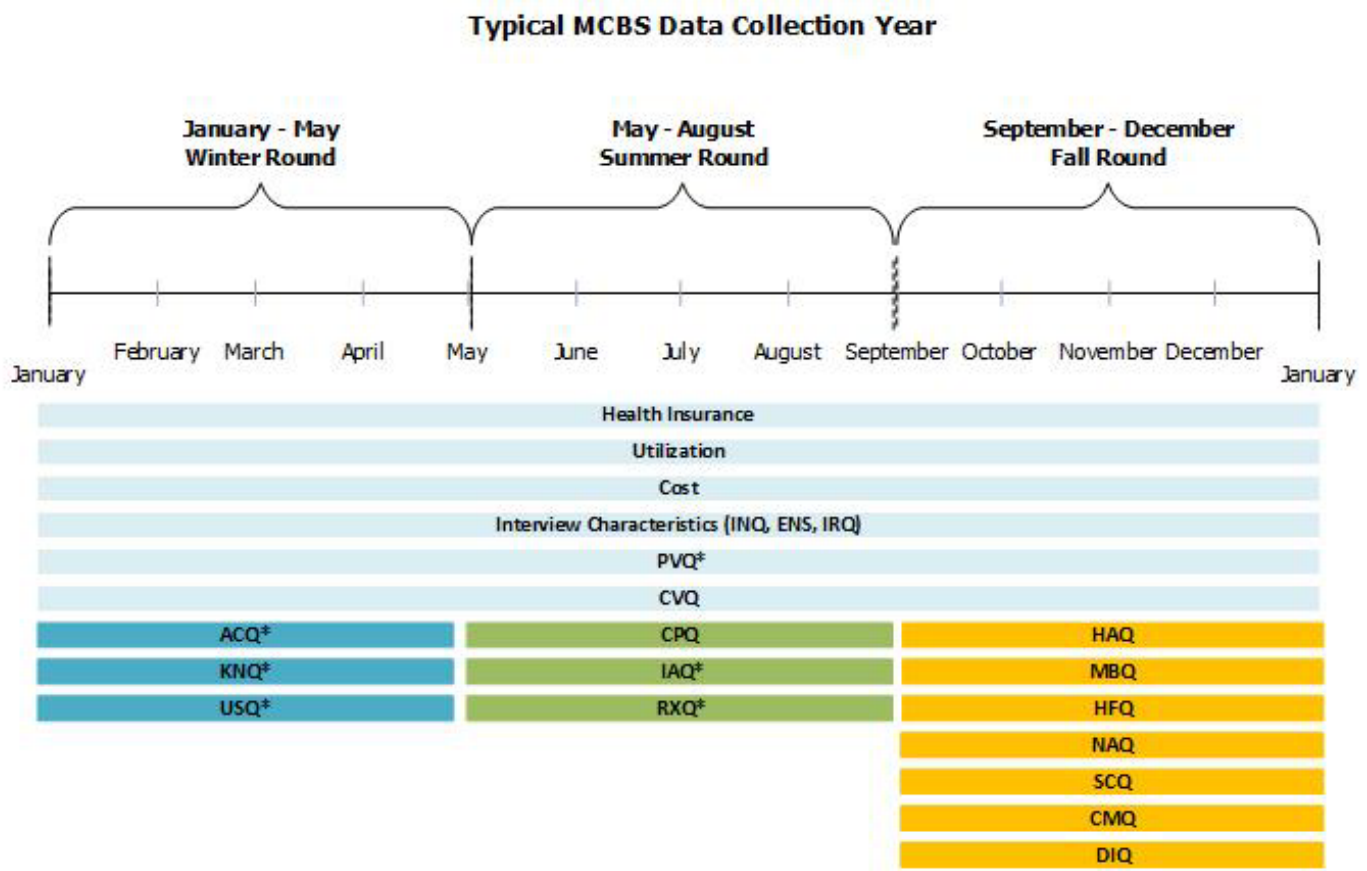
The **Beneficiary Knowledge and Information Needs (KNQ)** section is administered in the winter round. These items measure the respondent's self-reported understanding of Medicare and common sources of information about health care and Medicare. KNQ collects information about the previous calendar year; thus, KNQ data collected in Winter 2022 (for the 2021 calendar year) are included in the 2021 LDS.

The **Drug Coverage (RXQ)** section is a summer round section that focuses on the Medicare Prescription Drug benefit, including respondent knowledge of the benefit, and opinions of the beneficiary's drug coverage, whether through a Medicare Prescription Drug Plan, a Medicare Advantage plan with prescription drug coverage, or a private insurance plan that covers prescription drugs. RXQ collects information about the previous calendar year; thus, RXQ data collected in Winter 2022 (for the 2021 calendar year) are included in the 2021 LDS.

### *5.2.5 Community Questionnaire Section Rotation within a Data Year*

Exhibit 5.2.9 presents the MCBS Questionnaire section rotation schedule for 2021. The 2021 MCBS data releases reflect data collected from January 2021 through December 2021 and also includes data collected in Winter and Summer 2022 rounds from questionnaire sections with a 2021 reference period.



**Exhibit 5.2.9:** 2021 Data Collection Year MCBS Community Questionnaire Section Rotation

\*Fielded in 2022, but given the reference period is 2021, data are included in the 2021 LDS.

### 5.3 Facility Instrument

In addition to collecting information from respondents living in the community, the MCBS collects information at the institutional level if the beneficiary is living in a facility at the time of the interview. Information is obtained only by interviewing Facility staff; the beneficiary is never interviewed directly.

Similar to the Community Questionnaire, if a beneficiary is living in a facility when first selected to participate in the MCBS, a Facility Baseline interview is administered. For cases in the 2<sup>nd</sup> through 11<sup>th</sup> round, a Facility Continuing interview is conducted. While administration of the Facility Instrument sections varies by season and interview type, the Facility Instrument is comprised exclusively of Core sections; each section collects information that is considered of critical importance to the MCBS.

**The Facility Instrument consists of the following components (see Exhibit 5.3):**

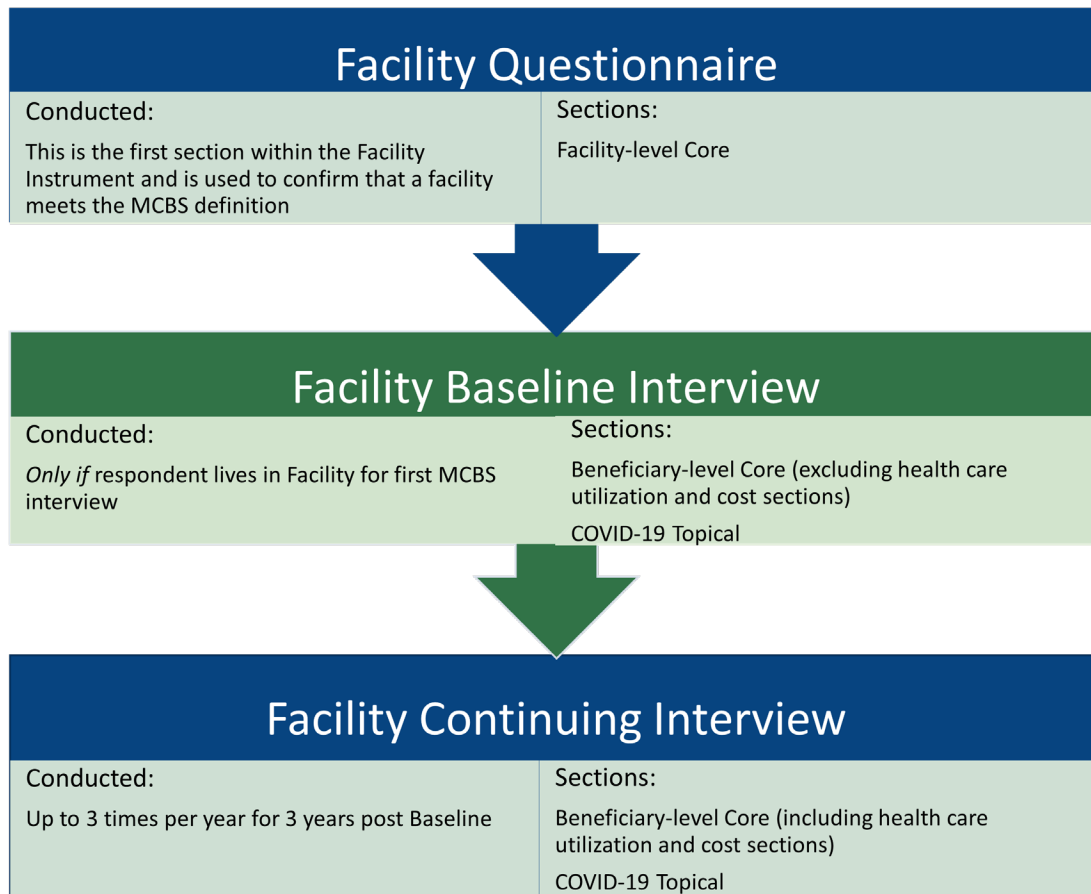
- Facility Questionnaire
- Facility Baseline interview
- Facility Continuing interview

Due to the redesign of the MCBS Facility Instrument in Fall 2019, the instrument flow varies for Medicare and/or Medicaid-certified facilities and facilities not certified by Medicare and/or Medicaid. Facilities that report a CMS Certification Number (CCN) and are therefore certified by Medicare and/or Medicaid receive a shortened MCBS Facility Instrument, as the FQ and HS sections skip variables redundant with Minimum Data Set (MDS) and Certification and Survey Provider Enhanced Reports (CASPER) administrative data. Variables skipped

during interview administration are instead populated using MDS and CASPER administrative data sources during data processing. Facilities that do not report a CCN receive the full MCBS Facility Instrument.

If a person living in a facility returns to the community, that person would receive the Community Questionnaire. If the beneficiary spent part of the reference period in the community and part in a facility, then a separate interview is conducted to collect information pertaining to the beneficiary's experiences covering each distinct period of time. In this way, a beneficiary is followed in and out of facilities and a continuous record is maintained regardless of the location of the beneficiary.

### Exhibit 5.3: Overview of the MCBS Facility Instrument



#### 5.3.1 Facility Baseline Interview

The Facility Baseline interview (see Exhibit 5.3.1) serves as a reference interview and gathers information on the facility itself as well as the health status, insurance coverage, residence history, and demographic information for the beneficiary. This flow depicts the sections and flow of the Facility Baseline interview for the 2021 calendar year, which is synonymous with the 2021 data year for Baseline cases.



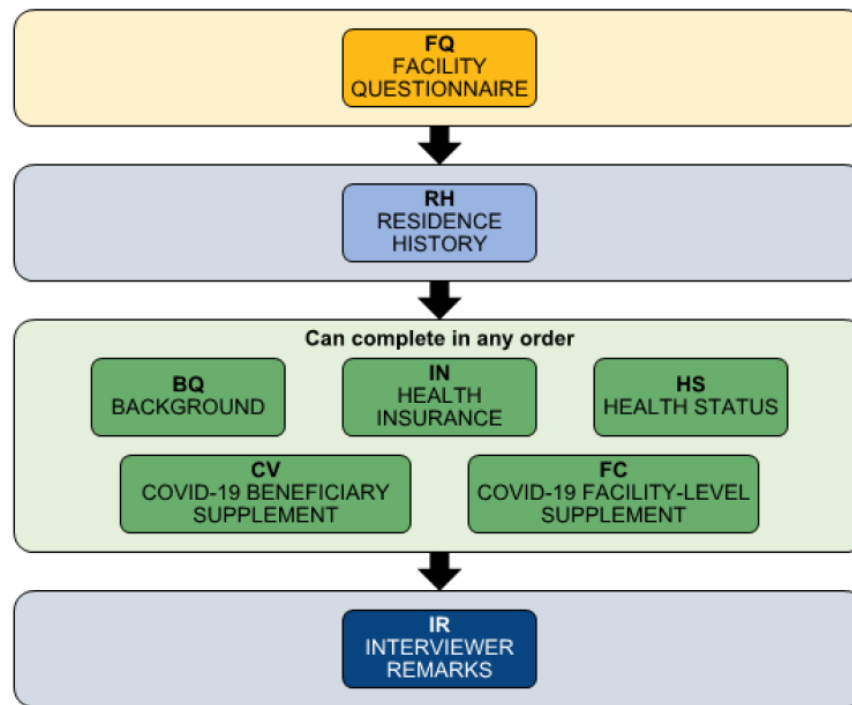
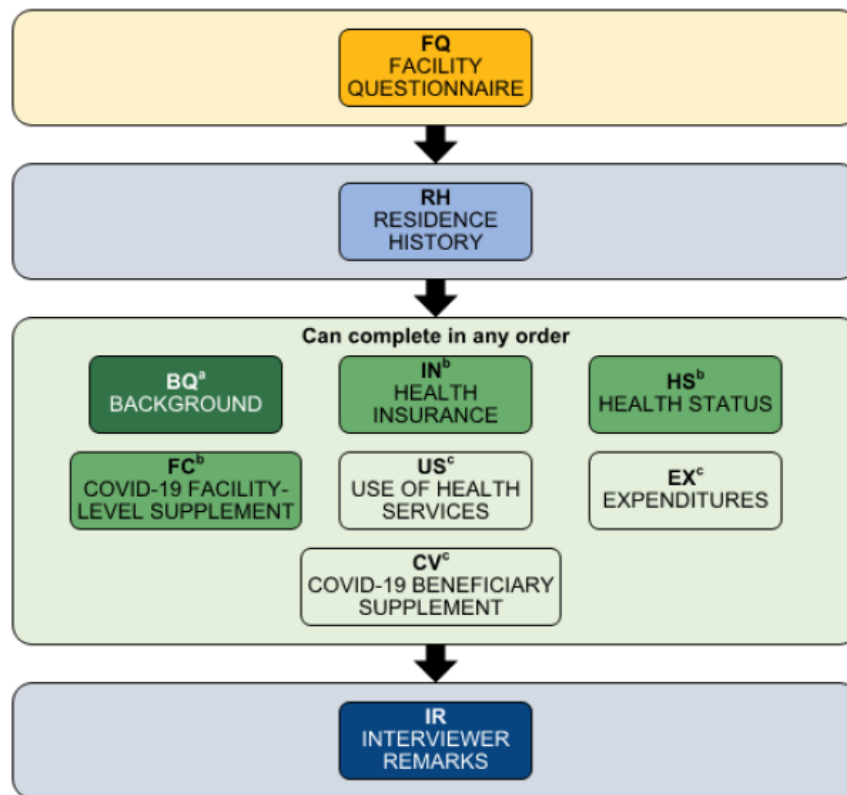
**Exhibit 5.3.1:** 2021 Data Collection Year MCBS Facility Instrument Flow for Baseline Interview**5.3.2 Facility Continuing Interview**

Exhibit 5.3.2 illustrates the flow of the Facility Continuing interview sections. This flow reflects the data collection year, rather than the data year, meaning the interviews conducted in the 2021 calendar year used the flows depicted. Note that beneficiaries who move to a facility from the community (Community to Facility cases), move to a new facility (Facility to Facility cases), or move to the community from the facility (Facility to Community cases) receive a different combination of Facility Continuing sections than beneficiaries who have lived continuously in the same facility.

**Exhibit 5.3.2:** 2021 Data Collection Year MCBS Facility Instrument Flow for Continuing Interviews

a = Administered only for Community to Facility interviews

b = Administered to all sample types in Fall round. Otherwise, administered only for Community to Facility, Facility to Facility, and for beneficiaries living in a Facility whose last interview was a Community interview and who completed a Facility interview in a prior round.

c = Administered for all Facility interviews

### 5.3.3 Facility Continuing Core Sections

Each Core section of the Facility Instrument is described below, organized by topic of information collected. The sections depicted in Exhibit 5.3.3 parallel the Core sections for the Community component. These sections of the Facility Continuing interview are administered in the same rotation as the Community Continuing interview (the 2<sup>nd</sup> through the 11<sup>th</sup> rounds); however, beneficiaries new to a facility receive additional Core sections.

Similar to the Community Questionnaire, operational management/procedural data are collected through the Interviewer Remarks (IR) section, which is completed by the interviewer and primarily used for case finalization. Exhibit 5.3.3 summarizes each component of the Facility questionnaire by data release.

**Exhibit 5.3.3:** 2021 Data Year MCBS Facility Core Sections by Data File and Data Collection Schedule\*

Section Group	Abbr.	Section Name	LDS <sup>§</sup>	Data Collection Schedule
Facility Characteristics	FQ	Facility Questionnaire	SF	All Seasons
Socio-Demographics	RH	Residence History	SF	All Seasons
	BQ	Background	SF	Fall 2021, Baseline Interview**
Health Insurance	IN	Health Insurance	SF	Fall 2021 <sup>±</sup>
Utilization	US	Use of Health Services	CS	All Seasons
Cost	EX	Expenditures	CS	All Seasons
Health Status	HS	Health Status	SF	Fall 2021 <sup>±</sup>

SOURCE: MCBS Facility Instrument

\*Certain procedural or operational management sections are collected specifically to manage the data collection process. These sections are not directly included in the LDS files (e.g., Interviewer Remarks (IR)).

\*\*The BQ section is also administered to Community-to-Facility Crossover cases each season.

<sup>±</sup>The IN and HS sections are also administered to Community-to-Facility and Facility-to-Facility cases each season.

<sup>§</sup>Limited Data Set (LDS) indicates the file where the questionnaire data appears (i.e., SF = Survey File, CS = Cost Supplement File).

### Facility Characteristics

The Facility Characteristics Core section contains the **Facility Questionnaire (FQ)** section of the Facility Instrument. The FQ section collects information on the number, classification, and certification status of beds within the facility; sources of payment for Facility residents; and Facility rates. Interviewers typically conduct the FQ with the Facility administrator. Interviewers are not allowed to abstract this section of the interview; it must be conducted with a Facility staff member.

Since the 2019 Facility Instrument redesign and the usage of administrative data for Medicare and/or Medicaid certified facilities, only facilities that do not report a CCN receive the full FQ section.

### Socio-Demographics

The Socio-Demographics Core sections capture key characteristics of the interview and the beneficiary. These include residence history and demographics.

The **Residence History (RH)** section collects information about all of the places that the beneficiary stayed during the reference period. Information is collected about where the beneficiary was just before entering the facility and where he/she went if they had been discharged. For each stay, the interviewer collects the name

of the place of residence, the type of place it is, and the start and end date for the period the beneficiary was living there.

The RH section creates a timeline of the beneficiary's whereabouts from the date the beneficiary entered the facility or the date of the last interview, through the date of interview, date of discharge, or date of death. The goal is to obtain a complete picture of the beneficiary's stays during the reference period, including any stays of one night or more in hospitals, other facilities, or any other place.

The **Background Questionnaire (BQ)** collects background information about the beneficiary, such as use of long-term care before admission to the facility, level of education, race, ethnicity, service in the Armed Forces, marital status, spouse's health status, living children, and income. The BQ is completed only once for each beneficiary during their first interview in the facility.

## Health Insurance

The Health Insurance Core section contains the **Health Insurance (IN)** section of the Facility Instrument. The IN section collects information about the beneficiary's type(s) of health insurance coverage. This includes questions about all types of health insurance coverage the beneficiary had in addition to Medicare: private insurance, long-term care insurance, Department of Veterans Affairs eligibility, and TRICARE or CHAMPVA.

Because of differences in interview setting, the content collected in the IN section differs from the content collected in the INQ section of the Community Questionnaire. For example, because the Facility Instrument is administered to Facility staff, as opposed to interviewing the beneficiary directly, the Facility Instrument collects the name of the insurance company for a beneficiary's private insurance plan but does not collect follow-up details about whether the plan was purchased through an employer or some other way.

## Utilization

The **Use of Health Care Services (US)** section collects information on the beneficiary's use of health care services while a resident of the facility. This includes visits with a range of providers including medical doctors, dentists, and specialists; visits to the hospital emergency room; and other medical supplies, equipment, and other types of medical services provided to the beneficiary.

The best Facility respondent for this questionnaire section is usually someone directly involved with the beneficiary's care or someone who is familiar with the medical records.

Data collected in US are released with the Cost Supplement File LDS. See the *Cost Supplement File: Data User's Guide* for more information.

## Cost

The Facility Cost component consists of the **Expenditures (EX)** section. The EX section collects information about bills for the beneficiary's care at a facility and payments by source for those charges. Data are only collected for the time period when the beneficiary was a resident of the facility at which the interview takes place. The EX section collects information by billing period (e.g., monthly, semi-monthly, quarterly, etc.).

Unlike the Community Questionnaire, which collects cost information for each service, the EX section collects only the fees the facility bills for the beneficiary's care. The EX section collects information on the amount billed for the beneficiary's basic care and for any health related ancillary services. Typically, the EX section is administered to Facility staff located in the billing office.

Data collected in EX are released with the Cost Supplement File LDS. See the *Cost Supplement File: Data User's Guide* for more information.

## Health Status

The **Health Status (HS)** section collects information on the beneficiary's general health status, ability to perform various physical activities, general health conditions, IADLs, and ADLs.

Most of the information needed to conduct the HS section may be found in a medical chart. The Federal Government requires that all nursing facilities certified by Medicaid or Medicare conduct comprehensive and standardized assessments of each resident's health status when the resident is admitted to the nursing home and at regular intervals thereafter.<sup>20</sup> These assessments are captured by the Long-Term Care MDS,<sup>21</sup> which contains a set of key items measuring a resident's capacity to function independently. Nursing homes use this information to assess each resident's health status, identify problem areas and, where problems exist, formulate care plans to address them.

The HS section is designed to mirror the flow and wording of the MDS items; it contains a subset of the MDS items. In addition, the HS section contains some questions that are not found on the MDS that are administered to provide information comparable to items asked during the Community Questionnaire. Examples include items about prostate exams and mammograms, Instrumental Activities of Daily Living, vaccinations, smoking history, and general health. Interviewers ask these questions of someone knowledgeable about the beneficiary's care or find the information in the medical chart.

Since the 2019 Facility Instrument redesign and the usage of administrative data for Medicare and/or Medicaid certified facilities, only facilities that do not report a CCN receive the full HS section.

## Operational and Procedural

The **Interviewer Remarks (IR)** section captures additional metadata about the interview, as recorded by the interviewer. This includes comments the interviewer may have about the interviewing situation and notes to themselves for use in gaining cooperation in the future. Data from this section are not included in the Survey File or the Cost Supplement File.

## Missing Data Sections

There are three additional sections, called missing data sections, which are activated when essential survey information is coded as "don't know" or "refused" in the Facility Questionnaire (FQ), Residence History (RH), or Background (BQ) sections. The missing data sections prompt the interviewer for the specific piece of information that is missing. There are no new questions in the missing data sections, just repeats of questions initially asked in the FQ, RH, or BQ. Examples of the type of missing information that activate the missing data sections are the name of the facility or date of death.

The purpose of the missing data sections is to reduce item non-response for key variables in a modular, flexible format. If the interviewer is able to obtain the missing information from another Facility staff member or from a different medical document, then the interviewer uses the missing data section to capture a non-missing response for the key questionnaire item without modifying responses for the other already-completed

<sup>20</sup> "Long-Term Care Facility Resident Assessment Instrument 3.0 User's Manual v.1.17.1," Centers for Medicare & Medicaid Services, October 2019.

<sup>21</sup> <https://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/Minimum-Data-Set-3-0-Public-Reports/index>

items in the FQ, RH, and BQ sections. If the interviewer is unable to obtain the missing information, either “don’t know” or “refused” is entered in the missing data sections.

The missing data sections are:

- Facility Questionnaire Missing Data (FQ\_MD): collects data missing from the FQ section of the interview;
- Residence History Questionnaire Missing Data (RH\_MD): collects data missing from the RH section;
- Background Questionnaire Missing Data (BQ\_MD): collects data missing from the BQ section.

### 5.3.4 Facility Topical Questionnaire Sections

In addition to the Core content, there are two Topical questionnaire sections that capture data on COVID-19 topics at the facility- and beneficiary-level. Each Topical section is described below, organized by information collected. Exhibit 5.3.4 lists the Topical sections and administration schedule.

**Exhibit 5.3.4:** 2021 Data Year MCBS Facility Topical Sections by Data File and Data Collection Schedule\*

Section Group	Abbr.	Section Name	LDS <sup>§</sup>	Data Collection Schedule
COVID-19	CV	COVID-19 Beneficiary Supplement	SF	All Seasons
	FC*	COVID-19 Facility-Level Supplement	SF	Fall 2021**

\*In Fall 2021, Facility-level COVID-19 items were migrated from the FQ to the FC section.

\*\*The FC section is also administered to Community-to-Facility and Facility-to-Facility crossover cases each season.

§Limited Data Set (LDS) indicates the file where the questionnaire data appears (i.e., SF = Survey File, CS = Cost Supplement File).

## COVID-19

The COVID-19 Supplement Topical sections capture key characteristics on the impact of the COVID-19 pandemic on long-term care facilities and Medicare beneficiaries.

The **COVID-19 Facility-Level Supplement (FC)** section collects information on topics that assess key ways in which COVID-19 has impacted facilities that serve Medicare beneficiaries. The FC section is separated into three main topics: availability of current telehealth services inside and outside of the facility, facility measures to prevent and control the spread of COVID-19, and mental health and social and recreational services offered inside and outside of the facility.

The FC section is completed for each beneficiary in the facility regardless of whether multiple beneficiaries live in the same facility. The Facility administrator is typically the most knowledgeable respondent for this section, although other Facility respondents may include (but are not limited to) social workers or MDS coordinators.

The **COVID-19 Beneficiary Supplement (CV)** section collects information on topics related to the beneficiary’s utilization of COVID-19 testing, COVID-19 medical care, and COVID-19 vaccine utilization. The CV section is completed for each alive beneficiary in the facility.

The best Facility respondent for this section is someone directly involved with the beneficiary’s care or someone who is familiar with their medical records.

## 6. SAMPLING

### 6.1 Medicare Population Covered by the 2021 MCBS Data

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. Excluded from both populations are residents of foreign countries and U.S. possessions and territories.

The beneficiaries included in the 2021 MCBS LDS releases represent a random cross-section of all beneficiaries who were ever enrolled in either Part A or Part B of the Medicare program for any portion of 2021. A subset of these beneficiaries represents a random cross-section of all beneficiaries who were continuously enrolled from January 1, 2021 up to and including interviews conducted during Fall 2021. The ever enrolled and continuously enrolled populations are described in further detail below:

- The ever enrolled population represents individuals who were enrolled in Medicare at any time during the calendar year. This population includes beneficiaries who enrolled during the calendar year 2021 as well as those who dis-enrolled or died prior to their fall interview.<sup>22</sup> The ever enrolled population includes beneficiaries who were enrolled in Medicare for at least one day at any point during 2021.
- The continuously enrolled population represents only those individuals continuously enrolled in Medicare from January 1, 2021 up to and including their fall interview; this specifically excludes beneficiaries who enrolled during the calendar year 2021 and those who dis-enrolled or died prior to their fall interview. The concept of continuously enrolled is consistent with the concept of being exposed or “at risk” for using services up to and including their fall interview.

The Survey File and Cost Supplement File represent four separate MCBS panels identified by the year in which the panel was selected and first interviewed (i.e., for 2021 LDS files, the 2018, 2019, 2020, and 2021 Panels). Exhibit 6.1 shows the composition of each of the four panels included in the 2021 data files.

**Exhibit 6.1:** 2021 MCBS Composition of Panels Contributing to the LDS Data Files

Data Year (Fall)	Number of Beneficiaries Selected
2018	11,523
2019	11,615
2020	15,952
2021	15,950

<sup>22</sup> Note that data collection for beneficiaries who enrolled during 2021 and died in 2021 after enrollment but before their fall interview was still pursued through attempts at conducting proxy interviews.

Exhibit 6.1.1 presents the aggregated estimates of the size of the two Medicare populations overall and by sex and race. Exhibits 6.1.2 and 6.1.3 present estimates of the size of the continuously enrolled and ever enrolled Medicare populations by race, and age (as of December 31, 2021) for male and female beneficiaries.

**Exhibit 6.1.1:** 2021 Total Estimated Number of Medicare Beneficiaries by Sex and Race\*

Group	Subgroup	Continuously Enrolled	Ever Enrolled
<b>Overall Total</b>		59,254,312	64,913,940
<b>Sex</b>	Male Total	26,876,022	29,422,758
	Female Total	32,378,290	35,491,182
<b>Race</b>	White non-Hispanic Total	43,938,935	46,384,093
	Black non-Hispanic Total	6,316,387	6,586,983
	Hispanic Total	4,491,764	4,830,227
	Other Total <sup>†</sup>	4,507,226	7,112,638

SOURCE: Beneficiary race/ethnicity were sourced from administrative data in the Sample Control File and the weights were sourced from the 2021 Survey File.

\* Weighted counts may not sum to the total of beneficiaries living in the community in the U.S. due to missingness.

<sup>†</sup>The "Other" race category includes other single races not of Hispanic origin, Two or More Races, or Unknown Races. See the Glossary (Appendix A) entry for race/ethnicity for more information.



**Exhibit 6.1.2:** 2021 Estimated Number of Male Medicare Beneficiaries by Race and Age\*

<b>Race</b>	<b>Age as of 12/31/2021</b>	<b>Continuously Enrolled</b>	<b>Ever Enrolled</b>
<b>White non-Hispanic</b>	<45	496,306	524,805
	45-64	1,816,351	1,827,333
	65-69	4,706,657	5,084,722
	70-74	5,119,923	5,302,952
	75-79	3,779,930	3,821,584
	80-84	2,350,041	2,492,025
	85+	1,838,522	2,158,207
<b>Black non-Hispanic</b>	<45	162,538	175,144
	45-64	605,776	588,716
	65-69	715,318	773,381
	70-74	673,034	701,193
	75-79	308,694	307,078
	80-84	189,764	220,543
	85+	139,747	150,134
<b>Hispanic</b>	<45	97,144	98,272
	45-64	326,438	343,277
	65-69	483,360	523,043
	70-74	429,491	454,165
	75-79	267,111	261,645
	80-84	168,611	173,847
	85+	161,000	172,592
<b>Other<sup>†</sup></b>	<45	117,702	185,564
	45-64	190,793	389,349
	65-69	764,937	1,721,170
	70-74	577,060	580,137
	75-79	250,411	247,486
	80-84	68,012	65,874
	85+	71,348	78,521

SOURCE: Beneficiary age and race/ethnicity were sourced from administrative data in the Sample Control File and the weights were sourced from the 2021 Survey File.

\* Weighted counts may not sum to the total of beneficiaries living in the community in the U.S. due to missingness.

<sup>†</sup>The "Other" race category includes other single races not of Hispanic origin, Two or More Races, or Unknown Races. See the Glossary (Appendix A) entry for race/ethnicity for more information.

**Exhibit 6.1.3:** 2021 Estimated Number of Female Medicare Beneficiaries by Race and Age\*

<b>Race</b>	<b>Age as of 12/31/2021</b>	<b>Continuously Enrolled</b>	<b>Ever Enrolled</b>
<b>White non-Hispanic</b>	<45	388,554	391,904
	45-64	1,857,668	1,870,592
	65-69	4,962,859	5,544,326
	70-74	5,982,693	6,124,801
	75-79	4,733,177	4,855,278
	80-84	2,822,054	2,958,769
	85+	3,084,199	3,426,795
<b>Black non-Hispanic</b>	<45	131,627	126,738
	45-64	624,712	629,601
	65-69	849,499	926,521
	70-74	721,217	729,314
	75-79	485,362	489,817
	80-84	332,491	346,439
	85+	376,608	422,365
<b>Hispanic</b>	<45	77,917	77,314
	45-64	349,641	356,597
	65-69	627,773	718,170
	70-74	585,778	629,715
	75-79	366,277	386,209
	80-84	281,601	303,541
	85+	269,620	331,841
<b>Other<sup>†</sup></b>	<45	81,117	137,886
	45-64	192,398	421,328
	65-69	1,054,146	2,143,327
	70-74	597,904	600,683
	75-79	214,699	208,882
	80-84	162,941	169,695
	85+	163,758	162,734

SOURCE: Beneficiary age and race/ethnicity were sourced from administrative data in the Sample Control File and the weights were sourced from the 2021 Survey File.

\* Weighted counts may not sum to the total of beneficiaries living in the community in the U.S. due to missingness.

<sup>†</sup>The "Other" race category includes other single races not of Hispanic origin, Two or More Races, or Unknown Races. See the Glossary (Appendix A) entry for race/ethnicity for more information.

## 6.2 Targeted Population and Sampling Strata

The targeted population for the MCBS consisted 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 applicable sample-selection year, and whose address on the Medicare files was in one of the 48 contiguous states (excludes Alaska and Hawaii) or the District of Columbia. For example, for Fall Rounds 2018, 2019, 2020, and 2021 (the four rounds in which the 2018, 2019, 2020, and 2021 Panels, included in the 2021 MCBS data, were selected), the targeted population included those individuals enrolled as of December 31 of 2018, 2019, 2020, and 2021, respectively.

The universe of beneficiaries for the MCBS is divided into seven sampling strata based on age as of December 31 of the sampling year in order to include all beneficiaries enrolling during the sampling year. The age categories are: under 45, 45 to 64, 65 to 69, 70 to 74, 75 to 79, 80 to 84, and 85 or older. The strata also separate Hispanic and non-Hispanic beneficiaries by age group. The 14 strata in 2021 are depicted in Exhibit 6.2.1.<sup>23</sup>

**Exhibit 6.2.1:** 2021 MCBS Sampling Strata

Hispanic	Non-Hispanic
Under 45 years Hispanic	Under 45 years non-Hispanic
45 - 64 Hispanic	45 - 64 non-Hispanic
65 - 69 Hispanic	65 - 69 non-Hispanic
70 - 74 Hispanic	70 - 74 non-Hispanic
75 - 79 Hispanic	75 - 79 non-Hispanic
80 - 84 Hispanic	80 - 84 non-Hispanic
85 and over Hispanic	85 and over non-Hispanic

Additionally, in the 2018, 2019, 2020, and 2021 Panels, beneficiaries residing within the U.S. who were Hispanic (based on a Hispanic ethnicity classification code in the Medicare enrollment data; see Eicheldinger<sup>24</sup> for more details) were oversampled to improve precision of estimates for this group.<sup>25</sup> See the *MCBS Methodology Report* for more information about this oversample. Exhibit 6.2.2 displays the beneficiaries selected as part of the 2021 Panel, by age and ethnicity.

<sup>23</sup> Note that the MCBS surveys beneficiaries living in community (e.g., households) and in facility (e.g., nursing home) settings; however, residence status is not known at the time of sampling and is therefore not included among the MCBS sampling strata.

<sup>24</sup> Celia Eicheldinger and Arthur Bonito, "More Accurate Racial and Ethnic Codes for Medicare Administrative Data," *Health Care Financing Review* 29, no. 3 (2008): 27-42.

<sup>25</sup> Oversampling of Hispanic beneficiaries has been conducted throughout the MCBS and has evolved over time. See prior *MCBS Methodology Reports* for more information: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks>.

**Exhibit 6.2.2:** 2021 Panel of Selected Beneficiaries by Hispanic and Non-Hispanic Ethnicity Classification and Age Category\*

Age Category as of 12/31/2021	TOTAL Sample Size	TOTAL Weighted	Hispanic Sample Size	Hispanic Weighted	Non-Hispanic Sample Size	Non-Hispanic Weighted
<b>Under 45 years</b>	1,258	1,659,891	122	169,770	1,136	1,490,121
<b>45-64 years</b>	1,602	6,583,153	205	706,299	1,397	5,876,853
<b>65-69 years</b>	3,082	17,400,366	353	1,372,986	2,729	16,027,380
<b>70-74 years</b>	2,314	15,184,363	262	1,059,604	2,052	14,124,759
<b>75-79 years</b>	2,402	11,114,718	273	770,068	2,129	10,344,650
<b>80-84 years</b>	2,651	6,900,385	298	525,169	2,353	6,375,216
<b>85+ years</b>	2,641	6,790,044	296	489,167	2,345	6,300,877
<b>Total</b>	15,950	65,632,920	1,809	5,093,064	14,141	60,539,856

SOURCE: Beneficiary age and race/ethnicity were sourced from administrative data in the Sample Control File and the weights were sourced from the 2021 Survey File.

### 6.2.1 Eligibility: Medicare Population Covered by the 2021 LDS

Beneficiaries who became eligible for Medicare Part A or B and enrolled anytime during the year were eligible to be sampled as part of the annual panel.<sup>26</sup> Thus, the 2021 Cost Supplement File includes data from the 2018, 2019, 2020, and 2021 Panels. The inclusion of the current-year enrollees allows data to be released in a timelier manner; the Survey File LDS is released 12-15 months after the end of data collection and the Cost Supplement File LDS is released 15-18 months after the end of data collection.

## 6.3 Three-Stage Cluster Design

The MCBS employs a three-stage cluster sample design. Primary sampling units (PSUs) are made up of major geographic areas consisting of metropolitan areas or groups of rural counties. Secondary sampling units (SSUs) are made up of census tracts or groups of tracts within the selected PSUs. Medicare beneficiaries, the ultimate sampling units (USUs), are then selected from within the selected SSUs. The MCBS sample is annually "supplemented" during the fall round to account for attrition (deaths, dis-enrollments, refusals) and newly enrolled persons. Each annual supplement is referred to as the Incoming Panel sample. For more information about the selection of the PSUs and SSUs, see the *MCBS Methodology Report*.

## 6.4 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.<sup>27</sup> For each continuing beneficiary, the survey questions corresponding to the Survey File data release are administered in the fall of the data collection year. Similarly, for beneficiaries new to the MCBS, the survey questions are administered as part of the initial fall Baseline interview. Exhibit 6.4 provides a brief summary of the number of selected beneficiaries and the inclusion criteria for the 2018 through 2021 Panels.

<sup>26</sup> These beneficiaries are referred to as "current-year enrollees."

<sup>27</sup> The MCBS 2021 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*.

**Exhibit 6.4:** 2021 MCBS Sample Selection for the LDS Releases

<b>Panel</b>	<b># of Selected Beneficiaries</b>	<b>Previously Enrolled Beneficiaries Still Alive as of January 1 of Panel Year</b>	<b>Current-Year Enrollees</b>
<b>2018</b>	11,523	Enrolled before 1/1/2018	Enrolled 1/1/2018 – 12/31/2018
<b>2019</b>	11,615	Enrolled before 1/1/2019	Enrolled 1/1/2019 – 12/31/2019
<b>2020</b>	15,952	Enrolled before 1/1/2020	Enrolled 1/1/2020 – 12/31/2020
<b>2021</b>	15,950	Enrolled before 1/1/2021	Enrolled 1/1/2021 – 12/31/2021

SOURCE: 2021 MCBS Internal Sample Control File

## 7. DATA PRODUCTS & DOCUMENTATION

### 7.1 Contents of Data Release

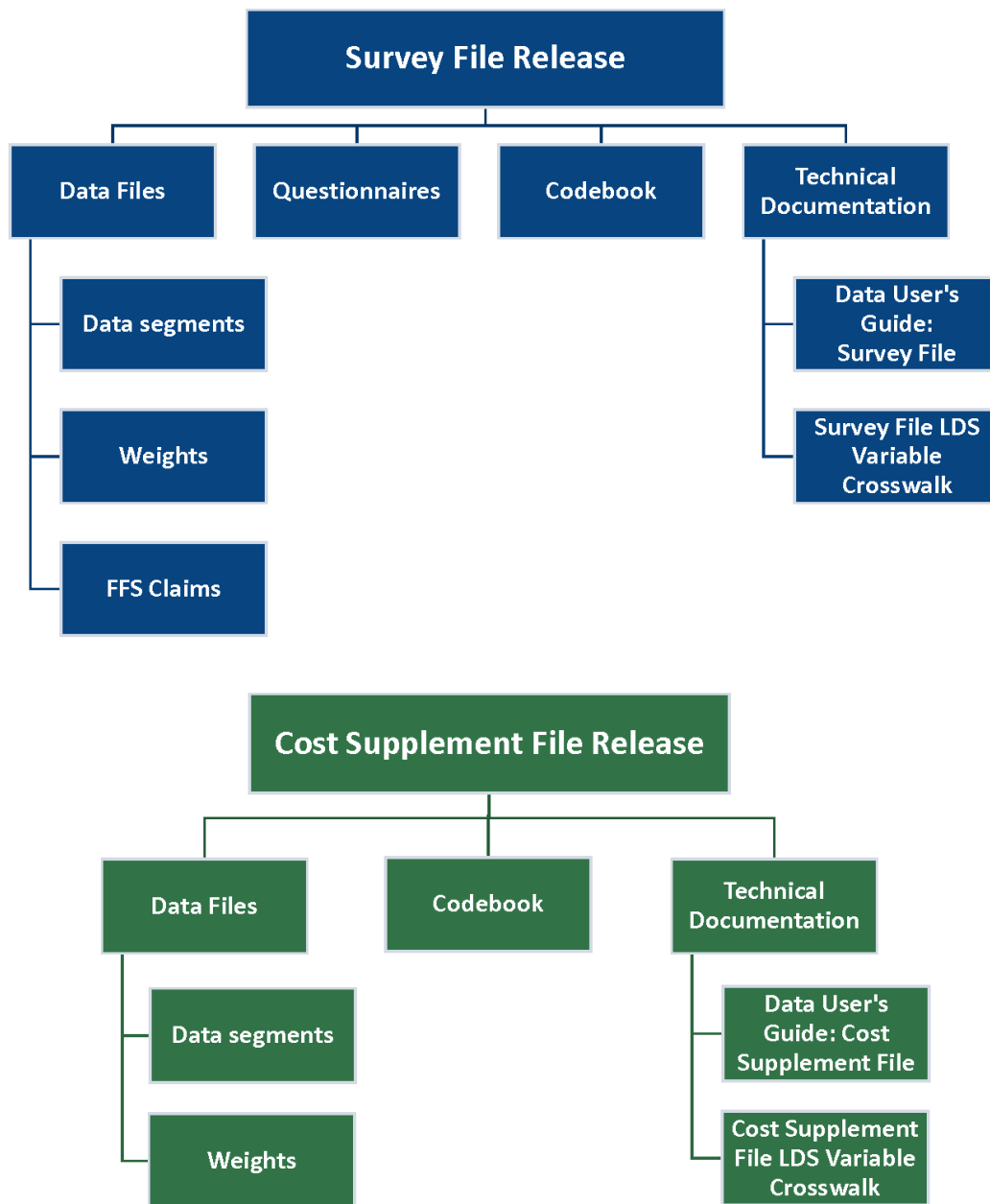
MCBS data are made available via releases of annual files. For each data year, two annual LDS releases (the Survey File and the Cost Supplement File) and two PUFs (based on the Survey File and Cost Supplement File, respectively) are planned.<sup>28</sup> The LDS releases contain multiple files, called segments, which are easily linkable through a common beneficiary key ID. The 2021 Survey File LDS contains over 6,000 variables across 46 segments and the 2021 Cost Supplement LDS contains over 600 variables across 15 segments.

Detailed descriptions of each segment, including the core contents of each segment, key variable definitions, and special notes on new variables, recodes, and administrative sources for select variables can be found in this document (see Section 10) and corresponding information for the Cost Supplement File can be found in the *MCBS Data User's Guide: Cost Supplement File*.

Exhibit 7.1 displays the components of each LDS release. Both the Survey File and Cost Supplement File contain data segments, codebooks, questionnaires, and technical documentation. The Survey File release contains the FFS claims data, which provide CMS administrative information on medical services and payments paid by Medicare claims; PDE events for Medicare Part D are not included and claims data for Medicare Advantage beneficiaries are not available. While users can conduct analyses with the Survey File alone, users interested in the Cost Supplement File data will need both LDS files to link cost and utilization variables with demographic or health insurance coverage variables.

---

<sup>28</sup> In addition to the annual MCBS Survey File PUF and MCBS Cost Supplement File PUF, CMS has released three special topic PUFs with data from the three MCBS COVID-19 Community Supplements, which correspond to the 2019 and 2020 data years. For more information, see the Data User's Guides available here: <https://www.cms.gov/research-statistics-data-and-systems/downloadable-public-use-files/mcbs-public-use-file>

**Exhibit 7.1:** 2021 Contents of Data Releases*7.1.1 2021 MCBS Survey File*

The Survey File contains data collected directly from respondents and supplemented by administrative items plus the facility (non-cost) information and FFS claims. The Survey File includes multiple topic-related segments, including health status and limitations, access to care, health insurance coverage, and household characteristics. The Survey File also includes information on Facility interviews, including a residence timeline, facility characteristics, and assessment (Minimum Data Set) measures. Finally, Topical questionnaire sections (e.g., beneficiary knowledge, drug coverage) are included with this release. To facilitate analysis, the information collected in the survey is augmented with data on the use and program cost of Medicare services from Medicare claims data and administrative data. The Survey File includes beneficiaries enrolled for at least

one day in 2021 who completed an interview in 2021 or Winter 2022, or who died during 2021. Beneficiaries who refused to complete a later interview or became nonrespondents during 2021 are excluded.

Exhibit 7.1.1 displays each segment included in the Survey File including the **segment abbreviation**, **brief description**, and **information on weights or other special notes**.

**Respondent Type** describes the expected setting where beneficiaries resided during the course of the calendar year (i.e., C = respondent only completed Community interviews, F = a Facility interview was conducted, or B = respondents completed at least one Community interview and for whom at least one Facility interview was conducted). In each data year, some differences by segment will exist (i.e., data may reflect a prior or future calendar year due to the specific questionnaire and reference period used to collect the information).

The **Data Source** column describes the source of the data on the segment. The three possible sources are the Community Questionnaire (CQ), Facility Instrument (FI), and Administrative Records (AR). Each LDS segment can have any combination of these sources. Data source is different from the respondent type variable in that it reflects where the data came from, not where the beneficiary was living. For example, a beneficiary could have lived in both settings during the year and so will have a respondent type = B, but the data for that beneficiary available on the ACCESSCR segment came from their Community interview only.

The **Quex Section** column lists the specific questionnaire sources for the LDS segment. Please note that not all variables from the questionnaire are released on the segments. Some questionnaire items are combined or recoded to create the LDS variable. Data users will see these derived variables noted in the codebooks preceded with the character "D", such as D\_ERVIST.

**Season** indicates the round (winter, summer, fall) and year when the questionnaire was administered.

**Panel** describes whether the questionnaire sections that provide the data for each segment are fielded for baseline respondents (base), continuing respondents (cont), or all panels (all). If the segment consists of administrative CMS data, then the cell indicates all panels are included.

**Unit of Observation** indicates what each row in the segment represents. For example, the ASSIST segment provides multiple rows per BASEID for each person reported as helping the beneficiary in the data year.

A list of equivalent historic segments from the 1991-2013 data release structure is provided in Appendix F.



**Exhibit 7.1.1:** 2021 MCBS Survey File Segments and Contents

<b>Survey File Segment (Abbrev)</b>	<b>Description</b>	<b>Data collection and special weights notes</b>	<b>Respondent Type*</b>	<b>Data Source **</b>	<b>Quex Section</b>	<b>Season</b>	<b>Panel ***</b>	<b>Unit of Observation</b>
Access to Care (ACCESSCR)	Information on ability to obtain health care, delay of care related to costs, and reasons for not obtaining needed health care.		C	CQ	HFQ	Fall	All	Beneficiary
Access to Care Medical Appointments (ACCSSMED)	Information on medical and dental visit experiences and forgone medical, dental, vision, hearing, and mental health care and prescription medicines.	The data collected in Winter 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	ACQ, DVH, MPQ, PMQ	Winter (ACQ) <sup>3</sup> All (DVH, MPQ, PMQ)	Cont.	Beneficiary
Administrative Utilization Summary (ADMNUTLS)	Summarized administrative information on Medicare, program expenditures, and utilization.		B	AR	n/a (Admin data)	n/a	All	Beneficiary
Assistance (ASSIST)	Information on the person helping and type of assistance that the beneficiary may receive performing ADLs and IADLs.		C	CQ	ENS, HFQ	All (ENS) Fall (HFQ)	All	Helper by beneficiary
Chronic Conditions (CHRNCOND)	Information on chronic and other diagnosed medical conditions.		C	CQ	HFQ, PVQ	Fall (HFQ, PVQ) <sup>3</sup>	All	Beneficiary
Chronic Conditions Flags (CHRNCDL)	FFS Chronic Condition Flag Records and FFS Chronic and other Disabling Flag records from administrative data sources.		B	AR	n/a (Admin data)	n/a	n/a	Beneficiary
Chronic Pain (CHRNPAIN)	Information on experiences with chronic pain and non-medication related chronic pain management techniques.	The data collected in Summer 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	CPQ	Summer	Cont.	Beneficiary
Cognitive Measures (COGNFUNC)	Measures of cognitive functioning.		C	CQ	CMQ	Fall	All	Beneficiary

Survey File Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
Community COVID-19 Vaccine Dosage (COMMDOSE)	Information on COVID-19 vaccine doses for beneficiaries in the community setting.	The data collected in Winter and Summer 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	CVQ	Winter, Summer	All	Beneficiary
COVID-19 Experience (COVIDEXP)	Information on COVID-19 vaccination, testing, diagnosis, symptoms, and prevention.		C	CQ	CVQ	Fall	All	Beneficiary
Demographics (DEMO)	Demographic information.		B	CQ, FI, AR	ENS, DIQ, INQ, BQ, RH	All (ENS, INQ, RH) Fall <sup>1</sup> (DIQ, BQ)	All (ENS, INQ, BQ, RH) Base. (DIQ)	Beneficiary
Diabetes (DIABETES)	Information on diabetes management such as insulin usage.		C	CQ	HFQ	Fall	All	Beneficiary
Facility Assessments (FACASMNT)	Assessment information conducted while the beneficiary was living in a Medicare approved or non-Medicare approved facility.		F	FI, AR	HS	Fall <sup>2</sup>	All	Beneficiary
Facility Characteristics (FACCHAR)	Primarily information from the Facility Questionnaire with Skilled Nursing Facility (SNF) stay information for beneficiaries living in the community and in facilities incorporated.		B	FI, AR	BQ, FQ, RH	Fall <sup>1</sup> (BQ) All (FQ, RH)	All	Facility by beneficiary
Falls (FALLS)	Information on injuries and attitudes about falls.		C	CQ	HFQ	Fall	All	Beneficiary
Food Insecurity (FOODINS)	Information on access to sufficient food.	The data collected in Summer 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	IAQ	Summer	Cont.	Beneficiary

Survey File Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
General Health (GENHLTH)	Information on general health status and functioning such as height and weight.		C	CQ	HFQ	Fall	All	Beneficiary
Health Insurance Summary (HISUMRY)	Administrative information on the characteristics of insurance coverage.		B	CQ, AR	HIQ	All	All	Beneficiary
Health Insurance Timeline (HITLINE)	Information on insurance plans and the coverage eligibility timeline as well as information regarding premiums and covered services.		B	CQ, FI, AR	CPS, HIQ, NSQ, STQ, IN	All (CPS, HIQ, NSQ, STQ) Fall <sup>2</sup> (IN)	Cont. (CPS, NSQ, STQ) Both (HIQ)	Plan type by beneficiary
Household Characteristics (HHCHAR)	Information on household composition and home.		B	CQ	ENS, HAQ	All (ENS) Fall (HAQ)	All	Beneficiary
Income and Assets (INCASSET)	Information on income and assets.	The data collected in Summer 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	B	CQ	IAQ	Summer <sup>3</sup>	Cont.	Beneficiary
Interview Characteristics (INTERV)	Information on interview characteristics.		B	CQ, FI	END, ENS, INQ, IRQ	All	All	Interview by beneficiary
MA Plan Questions (MAPLANQX)	Information on access to and satisfaction with care for beneficiaries enrolled in Medicare Part C.		C	CQ	HIQ	All	All	Beneficiary
Medicare Plan Beneficiary Knowledge (MCREPLNQ)	Information on experiences with the Medicare open enrollment period and knowledge about Medicare-covered expenses.	The data collected in Winter 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	KNQ	Winter <sup>3</sup>	Cont.	Beneficiary

Survey File Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
Minimum Data Set (MDS3)	Assessment information conducted while the beneficiary was living in an approved Medicare facility.		B	AR	n/a (Admin data)	n/a	n/a	Assessment by beneficiary
Mental Health (MENTHLTH)	Information on mental health such as feelings of anxiety or depression.		C	CQ	HFQ	Fall	All	Beneficiary
Mobility (MOBILITY)	Information on the use of available transportation options and whether health status affects their daily travel.		C	CQ	MBQ	Fall	All	Beneficiary
Multiple Year Enrollment (MYENROLL)	Up to five years of beneficiary enrollment information with monthly flags related to Part D and LIS enrollment, dual eligibility status, and type of Medicare coverage.		B	AR	n/a	n/a	All	Beneficiary
Nagi Disability (NAGIDIS)	Information on difficulties with performance of activities of daily living.		C	CQ	HFQ	Fall	All	Beneficiary
Nicotine and Alcohol (NICOALCO)	Information on the prevalence and frequency of alcohol and nicotine use.		C	CQ	NAQ	Fall	All	Beneficiary
Outcome and Assessment Information (OASIS)	Assessment information conducted while the beneficiary was receiving home health services.		B	AR	n/a (Admin data)	n/a	n/a	Assessment by beneficiary
Patient Activation (PNTACT)	Information on the degree to which beneficiaries actively participate in their health care and decisions concerning care.	Special non-response adjustment weights are included with this file.	C	CQ	SCQ	Fall	All	Beneficiary
Preventive Care (PREVCARE)	Information on preventive services such as vaccinations and routine screening procedures.		C	CQ	HFQ, PVQ	Fall (HFQ) All (PVQ) <sup>3</sup>	All	Beneficiary
Residence Timeline (RESTMLN)	Information on where the beneficiary lived over the course of the year.		B	CQ, FI	HHQ, IPQ, IUQ	All	Cont.	Beneficiary

Survey File Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
RX Medications (RXMED)	Information on prescription medication access and satisfaction with and knowledge about Medicare Part D.	The data collected in Summer 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	RXQ	Summer <sub>3</sub>	Cont.	Beneficiary
Satisfaction with Care (SATWCARE)	Information on satisfaction with different aspects of health care.		C	CQ	SCQ	Fall	Cont. (MPQ, PMQ) Both (SCQ)	Beneficiary
Telemedicine (TELEMED)	Information on telemedicine visit availability and usage.	The data collected in Winter 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	TLQ	Winter <sup>3</sup>	Cont.	Beneficiary
Usual Source of Care (USCARE)	Information on where and how the beneficiary typically seeks medical care.	The data collected in Winter 2022 are released with the 2021 Survey File given that the reference period is 2021. Special non-response adjustment weights are included with this file.	C	CQ	USQ	Winter <sup>3</sup>	Cont.	Beneficiary
Vision and Hearing (VISHEAR)	Information on eye health and hearing status.		C	CQ	HFQ	Fall	All	Beneficiary
Weights (CENWGTS) (EVRWGTS) (LNG2WGTS) (LNG3WGTS) (LNG4WGTS)	The weights segments include: longitudinal weights for the continuously enrolled population, general-purpose cross-sectional weights, a series of replicate weights, and weights to represent the ever enrolled population.		B	CQ, FI	n/a	n/a	All	Beneficiary
COVID-19 Facility Beneficiary-Level Supplement (FBENCVFL)	Information on COVID-19 diagnosis, testing, and care received by beneficiaries living in a facility during the fall of 2021 and winter of 2022.		F	FI	CV	Fall, Winter	All	Beneficiary

Survey File Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source**	Quex Section	Season	Panel ***	Unit of Observation
COVID-19 Facility Facility-Level Supplement (FFACCVFL)	Information on ways COVID-19 impacted facilities that serve Medicare beneficiaries during the fall of 2021 and winter of 2022.		F	FI	FC	Fall, Winter <sup>2</sup>	All	Facility by beneficiary
Fee-for-Service Claims (FFS)	Abbreviated FFS claims data. Additional claims-like data will be included as they become available in subsequent years (e.g., Encounter Data, Medicaid claims data).		B	AR	n/a	n/a	All	Beneficiary

\* = Respondent type describes the expected setting where beneficiaries resided during the course of the calendar year (i.e., C = respondent only completed Community interviews, F = a Facility interview was conducted, or B = respondents completed at least one Community interview and for whom at least one Facility interview was conducted). In each data year, some differences by segment will exist (i.e., data may reflect a prior or future calendar year due to the specific questionnaire and reference period used to collect the information).

\*\* = Data source describes the source of the data on the segment. The three possible sources are the Community Questionnaire (CQ), Facility Instrument (FI), and Administrative Records (AR). Each LDS segment can have any combination of these sources. Data source is different from the respondent type variable in that it reflects where the data came from, not where the beneficiary was living. For example, a beneficiary could have lived in both settings during the year so have a respondent type = B but the data for that beneficiary available on the ACCESSCR segment came from their Community interview only.

\*\*\* = Panel describes whether the questionnaire sections that provide the data for each segment are fielded for baseline respondents, continuing respondents, or both.

1. The BQ section is also administered to Community-to-Facility Crossover cases each season.
2. The FC, IN, and HS sections are also administered each season to Community-to-Facility cases, Facility-to-Facility cases, and for beneficiaries living in a Facility whose last interview was a Community interview and who completed a Facility interview in a prior round cases.
3. These sections are administered in rounds following the current data year given that the reference period is the prior year and data are included in the prior year data files.

### 7.1.2 2021 MCBS Cost Supplement File

The Cost Supplement File contains both individual event and summary files and can be linked to the Survey File to conduct analyses on health care cost and utilization. The Cost Supplement File links survey-reported events to Medicare FFS claims and provides a comprehensive picture of health services received, amounts paid, and sources of payment, including those not covered by Medicare. Survey-reported data include information on the use and cost of all types of medical services, as well as information on supplementary health insurance costs. Medicare FFS claims data include administrative and billing information on the use and cost of inpatient hospitalizations, outpatient hospital care, physician services, home health care, durable medical equipment, skilled nursing home services, hospice care, and other medical services.<sup>29</sup> The Cost Supplement File can support a broader range of research and policy analyses on the Medicare population than would be possible using either survey data or administrative claims data alone.

The Cost Supplement File contains a subset of the beneficiaries included in the Survey File who have complete cost and utilization data for the year. For the 2021 MCBS data year, the Cost Supplement File includes beneficiaries sampled in the 2018 through 2020 Panels, plus members of the 2021 Panel who were enrolled in Medicare during 2021 for at least one day.

For beneficiaries enrolled in Medicare Advantage, cost and utilization information is available. As is done with services not covered by Medicare (e.g., most dental, vision, and hearing care), when a beneficiary reports health care events, the MCBS uses the explanation of benefits (EOB) form from Medicare Advantage providers to report the payments, as well as the capitation information from the administrative data for total Medicare Advantage Payments. Actual claims-based information for MA beneficiaries, referred to as encounter data, is not currently available for these individual events. The Cost Supplement File undergoes a careful reconciliation process to separately identify and flag health care services reported: 1) from the survey alone, 2) from the claims data alone, and 3) from both sources. This process results in a file with a much more complete and accurate picture of health services received, amounts paid, and sources of payment. Due to the added processing time required to reconcile survey reported events with the claims data, this file is generally released 18 months after the close of the calendar year for data collection.

Exhibit 7.1.2 displays each segment included in the Cost Supplement File along with the abbreviation, description, and the equivalent historic segment from the 1991-2013 data release structure.

<sup>29</sup> Only Medicare claims for beneficiaries enrolled in Medicare Fee-for-Service (FFS, often called “traditional” Medicare), are available for linkage; similar claims information for Medicare Advantage (MA) beneficiaries is not available. To the extent that health care use and costs may be underreported in the survey or reported differentially between FFS and MA beneficiaries, this will be reflected in the data as MA beneficiaries’ information will not be supplemented by claims data.

**Exhibit 7.1.2:** 2021 MCBS Cost Supplement File Segments and Contents

<b>Cost Supp. Segment (Abbrev)</b>	<b>Description</b>	<b>Data collection and special weights notes</b>	<b>Respondent Type*</b>	<b>Data Source **</b>	<b>Quex Section</b>	<b>Season</b>	<b>Panel ***</b>	<b>Unit of Observation</b>
Dental Utilization Events (DUE)	Contains individual dental events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	DVH, US	All	All	One record per beneficiary per event (defined as a single visit to the dentist)
Facility Events (FAE)	Contains individual facility events reported during a Facility interview.	There is one record for each stay that occurred at least partly in the data year.	F	FI, AR	RH, US, EX	All	All	One record per beneficiary per stay in a long-term care facility
Hearing Utilization Events (HUE)	Contains individual hearing care events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	DVH, US	All	All	One record per beneficiary per event (defined as a single visit to a hearing care provider)
Home Health Events (HHE)	Contains individual home health care events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	HHQ	All	All	One record per beneficiary per event (defined as a separate visit or service for a survey-reported home health event)
Inpatient Hospital Events (IPE)	Contains individual inpatient hospital events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	IUQ, IPQ, ERQ, OPQ, US	All	All	One record per beneficiary per admission
Institutional Events (IUE)	Contains individual short-term facility (usually skilled nursing facility) stays reported during a Community interview or created from Medicare claims data.		B	CQ, AR	IUQ, IPQ, US	All	All	One record per beneficiary per admission



Cost Supp. Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
Medical Provider Events (MPE)	Contains individual events for a variety of medical services, equipment, and supplies reported during a Community interview or created from Medicare claims data.		B	CQ, AR	ERQ, IPQ, MPQ, OMQ, OPQ, US	All	All	One record per beneficiary per event (defined as a separate visit, procedure, service, or a supplied item for a survey-reported event)
Outpatient Hospital Events (OPE)	Contains individual outpatient hospital events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	OPQ	All	All	One record per beneficiary per event (defined as a single outpatient visit)
Prescribed Medicine Events (PME)	Contains individual outpatient prescribed medicine events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	PMQ, DVH, ERQ, IPQ, OPQ, MPQ	All	All	One record per beneficiary per prescribed medicine (defined as a single prescribed medicine)
Vision Utilization Events (VUE)	Contains individual vision care events reported during a Community interview or created from Medicare claims data.		B	CQ, AR	DVH, US	All	All	One record per beneficiary per event (defined as a single visit to a vision care provider)
Person Summary (PS)	Summarization of utilization and expenditures by type of service and summarization of expenditures by payer, yielding one record per person.		B	CQ, FI, AR	all utilization including HHQ, US	All	All	One record per beneficiary
Service Summary (SS)	Summarization of the 10 individual event files (including two records for home health), along with hospice utilization, yielding a total of 12 summary records per person.		B	CQ, FI, AR	all utilization including HHQ, US	All	All	12 records per beneficiary

Cost Supp. Segment (Abbrev)	Description	Data collection and special weights notes	Respondent Type*	Data Source **	Quex Section	Season	Panel ***	Unit of Observation
CSEVWGTS	Contains cross-sectional full-sample and replicate weights representing the 2021 ever enrolled population.		B	CQ/FI	N/A	All	All	One record per beneficiary
CSL2WGTS CSL3WGTS	Contains longitudinal full-sample and replicate weights for the multi-year ever enrolled population. The CSL2WGTS file includes the two-year longitudinal weights for the population ever enrolled at any time during both 2020 and 2021. The CSL3WGTS file includes the three-year longitudinal weights for the population ever enrolled at any time during 2019, 2020, and 2021.		B	CQ/FI	N/A	All	All	One record per beneficiary

\* = Respondent type describes the expected setting where beneficiaries resided during the calendar year (i.e., C = respondent only completed Community interviews, F = a Facility interview was conducted, or B = respondents completed at least one Community interview and for whom at least one Facility interview was conducted). In each data year, some differences by segment will exist (i.e., data may reflect a prior or future calendar year due to the specific questionnaire and reference period used to collect the information).

\*\* = Data source describes the source of the data on the segment. The three possible sources are the Community Questionnaire (CQ), Facility Instrument (FI), and Administrative Records (AR). Each LDS segment can have any combination of these sources.

\*\*\* = Panel describes whether the questionnaire sections that provide the data for each segment are fielded for baseline respondents, continuing respondents, or both.

The Cost Supplement segments are assembled at three levels:

- The Event level reports all payers, costs, and utilization at the most detailed level available (one observation per event per person).
- The Service Summary level summarizes all payers, costs, and utilization for a person at the service level (one observation per service type per person).
- The Person Summary level summarizes all payers and costs across service categories and summarizes type of service amounts (one observation per person).

The tri-level structure allows researchers to fit the research problem they are addressing to the available file summary levels, and potentially avoid having to process all the detailed event records in the file when summaries may suffice. For example, an analysis of differences in total health spending per person between men and women could use the person summary level, and thereby avoid having to process the more numerous event level records. Similarly, an analysis of differences in use of Medicare hospital payments by race could use the type of service summary records. Event level records would be used for more detailed analyses, for example, average length of long-term facility stays or average reimbursements per prescription drug type. For a more complete discussion of the tri-level file structure, see the *MCBS Data User's Guide: Cost Supplement File* document.

### 7.1.3 Using the Data

The MCBS data releases are made available in two formats: SAS formatted files and comma delimited files for use with Stata® and R®. Directions and sample SAS code are given below to help users read the dataset into SAS (see Appendix C). Files with programming code to create formats and labels are provided for both SAS users and for use with comma delimited files.

### 7.1.4 Research Claims Files

The fixed-length claims (also known as the research claims) are abbreviated versions of the full claim record layout. Each claim type has a subset of variables selected for their relevancy to data analysis of that service. Additionally, institutional claim types have a corresponding revenue center file that links back to the claim-level data file through a unique claim identifier. See Section 8.3: Claims Files for more on the claims file specifications.

There is one observation per data record for all of the MCBS claims files except the Physician/Supplier Claims and Durable Medical Equipment (DME) Claims. Those claim types treat each line item as a separate observation with the claim-level detail repeating for each line item.

## 7.2 Which File Do I Need?

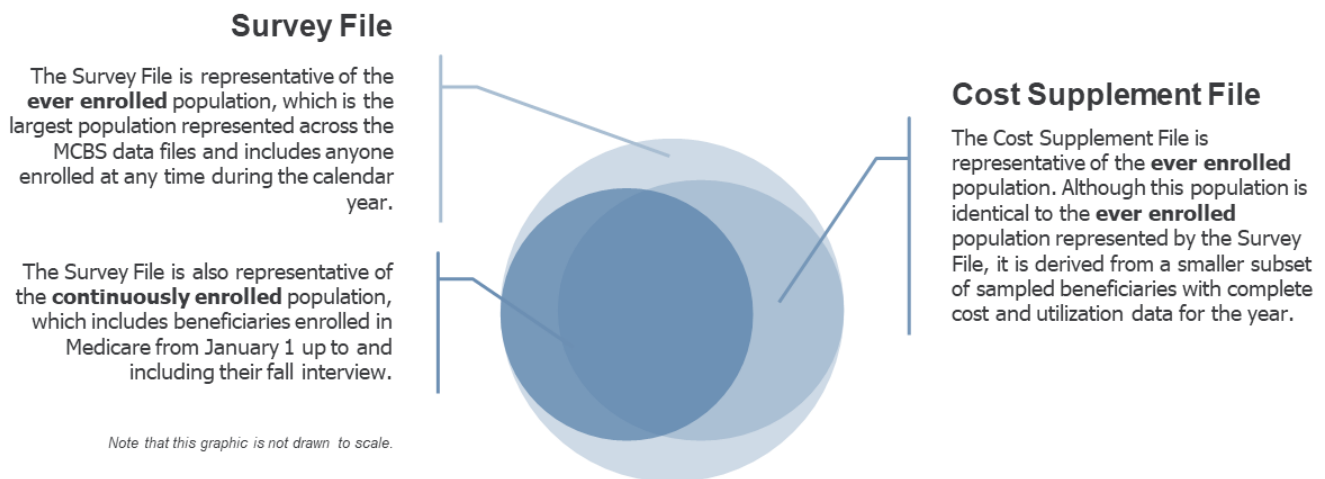
The identification of the target population for a given research question will influence both the selection of weights and the particular segments that a data user will need to conduct analyses. Exhibit 7.2 depicts the relationship between the beneficiaries included in the annual data releases.<sup>30</sup> The ever enrolled population from the Survey File is the largest, including anyone enrolled at any time during the calendar year corresponding to the LDS data year. The continuously enrolled represent the population of beneficiaries who were enrolled continuously between January 1 through the completion of their fall interview. Beneficiaries who died during the year, newly enrolled beneficiaries who enrolled in Medicare during the year that they were sampled, and beneficiaries who have lost eligibility are not included in the continuously enrolled group. The

<sup>30</sup> Exhibit 7.2 is not drawn to scale, but provided as a visual reference for the relationship of populations between data files.

ever enrolled represent the population of beneficiaries who were ever enrolled in Medicare for at least one day at any time during the year. The ever enrolled population includes beneficiaries who died or lost entitlement prior to completing the fall interview. Beneficiaries who first became enrolled in Medicare during the year are also included. Thus, the continuously enrolled beneficiaries are a subset of the ever enrolled beneficiaries. The Survey File LDS includes weight segments that allow for subsetting the data by the ever enrolled and continuously enrolled populations.

The Cost Supplement File is representative of the ever enrolled population, but is smaller than the Survey File population because it is derived from a smaller subset of sampled beneficiaries with complete cost and utilization data for the entire year. As does the Survey File, the Cost Supplement File includes a weight segment that allows for subsetting the data by the ever enrolled population.

## Exhibit 7.2: MCBS Populations in Data Products



### 7.2.1 Survey File Only

Users who wish to focus on research questions around health-related topics, such as health status and access to care and/or Medicare FFS utilization, only need the Survey File.

### 7.2.2 Using Both Survey File and Cost Supplement File

To the extent that a data user needs demographic and health insurance information to conduct research on the cost and utilization of medical services, both the Survey File and the Cost Supplement File are required. Data users must also use the ever enrolled cost weights when analyzing any cost data from the Cost Supplement File combined with survey-reported information from the Survey File. For more information on using the weights, please see 9.4 Weighting.

### 7.2.3 Using Both Community and Facility Data

Analytic decisions about whether to include all beneficiaries regardless of residence status or those living only in the community or only in facilities should be driven by both the research question and data limitations. However, as discussed in Sections 4 and 5, there are differences in the data collection protocols and questionnaire instruments for the MCBS Community and Facility components. Thus, caution should be observed when combining data across these populations to address questions requiring analysis of all Medicare beneficiaries.

In order to determine which population should be included in an analysis, the following steps are recommended:

1. Define the population based on the research question(s) and identify the living in community and living in facility populations. The variable INT\_TYPE on the DEMO segment is the recommended variable for defining the two populations. See Section 10.3.11 for more information on INT\_TYPE.
2. Identify the LDS segments and variables associated with each of the analysis' domains to determine what data are available for the Community and Facility components.
3. Assess whether the universe, level of measurement, and response categories for the variables of interest are similar for both Community and Facility components.
4. If needed, recode the LDS variables to align the coding between Community and Facility components and create analytic variables.
5. Merge the Community and Facility segments with the appropriate weights segments. Assess preliminary estimates for variation between community and facility.
6. Review MCBS documentation to determine if there are underlying differences in data collection and processing between community and facility that result in analytic limitations.
7. Conduct analysis and document any potential limitations.

For more information on using community and facility data, including a series of analytic examples with sample SAS code, see the *MCBS Advanced Tutorial on Using Community and Facility Data*. Data users can access this tutorial at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Briefs>.

## 8. FILE STRUCTURE

### 8.1 LDS Specifications

The MCBS Survey File contains survey-collected data augmented with administrative and claims data to allow for analysis regarding the beneficiaries' health status, access to health care, satisfaction with health care, and usual source of care. The following information is represented in the MCBS Survey File: beneficiary demographics, household characteristics, access to care, satisfaction with care, usual source of care, health insurance timeline (shows types of insurances, the coverage eligibility, and what is covered), health status and functioning, and other Topical questionnaire sections like medical conditions and chronic pain, health behaviors, preventive services, interview characteristics, beneficiary knowledge of the Medicare program, residence timeline, facility characteristics, and income and assets.

In terms of Medicare eligibility and enrollment data, HITLINE provides monthly coverage indicators, coverage start and end dates, the type of plan, and the source of coverage information for the plan. HISUMRY also contains eligibility codes and detailed Medicare-Medicaid dual eligibility indicators.

### 8.2 File Structure

The Survey File segments can be divided into two subject matter groups: files containing survey data with related Medicare administrative variables and files containing Medicare FFS claims data. The claims records represent services provided during calendar year 2021 and processed by CMS. To facilitate analysis, the ADMNUTLS record contains a detailed summary of the utilization enumerated by these claims.

All MCBS segments begin with the same three variables: a unique number that identifies the person who was sampled (the BASEID), the survey reference year (in this release, a constant "2021"), and the version of release. These elements serve to identify the type of record and to provide a link to other types of records. To obtain complete survey information for an individual, a researcher must link together records for that individual from the various data files using the variable BASEID. Beneficiaries may not have a record on every data file. Exhibit 7.1.1 provides an overview of the Survey File segments and their inclusion of Community-only respondents, Facility-only respondents, or both types of respondents.

#### *Sort Order for Merging the Survey File LDS Segments*

Sort order is often important to understand when data users are merging segments within or across LDS releases. Most LDS segments are sorted by BASEID. However, some are sorted on other fields to create appropriate and unique sort keys for matching and merging the data. See Exhibit 8.2.1 below.

**Exhibit 8.2.1:** Sort Order by Segment in the Survey File LDS

Segment	Sorted by
ASSIST	BASEID HLPRNUM
FACCHAR	BASEID RECADMN
HITLINE	BASEID PLANTYPE PLANNUM
INTERV	BASEID SEQNUM
MDS3	BASEID TRGT_DT A2300
OASIS	BASEID M0090_AS

The MCBS Research Claims are a subset of items from the claims available on the Chronic Conditions Warehouse (CCW). All research claims are sorted by BASEID and CLAIMID. The MCBS Claims Variable Crosswalk spreadsheet crosswalks the MCBS claims item (variable) names with the CCW item (variable) names.

Item (variable) names are listed in alphabetical order. MCBS Research Claims have a unique and de-identified BASEID and CLAIMID, so that these cannot be linked back to the original claims.

The full descriptions of the items on the MCBS Research Claim can be found on the public facing CCW Claims Data Dictionary, located at: <https://www2.ccwdata.org/documents/10280/19022436/codebook-ffs-claims.pdf>

## 8.3 Claims Files

The fixed-length claims (also known as the research claims or FFS claims) are abbreviated versions of the full claim record layout. Each claim type has a subset of variables selected for their relevancy to data analysis of that service. Additionally, institutional claim types have a corresponding revenue center file that links back to the claim-level data file through a unique claim identifier. The Research Claims are provided as SAS files and as CSV files.

MCBS data can be linked to Medicare Part A and Part B claims data for beneficiaries who participated in the MCBS. MCBS data cannot be linked to electronic medical records, or to any other records that record lab values or physiologic data.

Starting with 2021, the Survey File LDS will include five years of research claims. This means that, depending on their original enrollment date and enrollment type (Medicare FFS vs. Medicare Advantage), a beneficiary could have up to five years of claims included with their MCBS data. This update is reflected in a change to the claims file names (e.g., the 2021 DME claims file is named "DME\_17\_21" instead of just "DME").

### 8.3.1 Utilization Detail Records

#### Core Content

The following rules were used to select claims records for the Claims files.

1. Inpatient claims were included if the discharge or "through" date fell on or after January 1, 2021 and on or before December 31, 2021.
2. Skilled nursing facility claims were included if the admission or "from" date fell on or after January 1, 2021 and on or before December 31, 2021.
3. Home health agency and outpatient facility claims were included if the "through" date fell on or after January 1, 2021 and on or before December 31, 2021.
4. Hospice claims were included if the admission or "from" date fell on or after January 1, 2021 and on or before December 31, 2021.
5. Physician or supplier claims were included if the latest "service thru" date fell on or after January 1, 2021 and on or before December 31, 2021.
6. Durable medical equipment (DME) claims were included if the latest "service thru" date fell on or after January 1, 2021 and on or before December 31, 2021.

A total of 2,446 (about 17 percent) of the 2021 survey respondents did not use Medicare reimbursed services in an FFS setting in 2021; consequently, there are no claims records for them in this file. These individuals may have used no services at all, services only in a managed care plan, or services provided by a payer other than Medicare.<sup>31</sup> For the other 11,781 individuals in the sample, the MCBS has captured claims meeting the date criteria, processed and made available by CMS through June 2022.<sup>32</sup>

<sup>31</sup> The HITLINE segment provides data on types of insurances, the coverage eligibility timeline, and the source information for the coverage use of services (i.e., Medicare Administrative enrollment data and/or survey data). The ACCESSCR and ACCSSMED segments also provide self-reported data on access and satisfaction with visits. See the Data File Notes section of this document for more information on the contents of these segments.

<sup>32</sup> Note that claims "mature" through the midpoint of the following calendar year. That is, 2021 claims were pulled from CMS' administrative data after June 2022 to ensure that the 2021 claims had been finalized.



## 9. DATA FILE DOCUMENTATION

### 9.1 LDS Contents

In addition to the data, CMS provides technical documentation with the following resources for data users:

- Codebooks
- Questionnaires
- Data files (SAS, CSV)
- Research claims (SAS, CSV)
- Format control files
- Sample SAS code to apply the formats and labels for those not using SAS

### 9.2 LDS Components

#### 9.2.1 Codebooks

Codebooks are included with each data release and serve as the key resource for comprehensive information on all variables within a data file. The codebooks list the variables in each of the segments, the possible values, and unweighted frequencies. For variables that are associated with items in the MCBS Questionnaire, the item number and item text are provided.

The information provided within each Codebook is as follows:

**Variable:** The Codebook contains the variable names associated with the final version of the data files. Certain conventions apply to the variable names. All variables that are preceded by the character "D\_", such as D\_ERVIST, are derived variables. Variables preceded by the character "H\_", such as H\_DOB, come from CMS administrative source files.

**Format Name:** This column identifies the format name associated with the variable in the SAS dataset.

**Frequency:** This column shows unweighted frequency counts of values or recodes for each variable.

**Question #:** This column contains a reference to the questionnaire for direct variables, or to the source of derived variables. For example, the entry that accompanies the variable D\_ERVIST in the Access to Care, Medical Appointments segment is "AC1." The first question in the Access to Care portion of the Community Questionnaire is the one referenced. This column will be blank for variables that do not relate to the questionnaire or to the CMS administrative source files, which are usually variables created to manage the data and the file.

**Description/Label (variable label and codes):** The variable label provides an explanation of the variable, which describes it more explicitly than would be possible in only eight letters. For coded variables, all of the possible values of the variable appear in lines beneath that explanation. Associated with each possible value (in the column labeled "Frequency") is a count of the number of times that the variable had that value, and, under the column labeled "Label", a short format expanding on the coded value.

**BASEID:** The BASEID is the unique identifier assigned to each beneficiary. This identifier can be used to link data across the survey files.

**Survey Year:** The Survey Year of interest is included as a variable on the file.



**Version Number:** Files may be re-released due to needed updates, which will be noted by the version number variable.

**Note:** Each variable may be followed by a statement that describes when a question was not asked, resulting in a missing variable. Questions were not asked when the response to a prior question or other information gathered earlier in the interview would make them inappropriate. For example, respondents who indicated that they never smoked (Community interview, question HFG1) would not be asked if they currently smoke (question HFG2). Notes also describe important information about the variable. For variables added to the survey recently, the first year of administration is also listed in the note.

Many questions were written to elicit simple “Yes” or “No” answers, or to limit responses to one choice from a list of categories. In other questions, the respondent was given a list of responses and instructed to select all responses that applied. In these cases when the question was a “select all that apply” item, each of the responses is coded “Indicated”/“Selected” or “Not Indicated”/“Not Selected.”

### *9.2.2 Questionnaires*

Data users can view the Questionnaires for each data year along with the questionnaire variable names and question text on the MCBS website at: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Questionnaires>.

### *9.2.3 Data User Resources*

CMS provides technical assistance to researchers interested in using MCBS data and provides free consultation to users interested in obtaining these data products and using these data in research. Users can email [MCBS@cms.hhs.gov](mailto:MCBS@cms.hhs.gov) with questions regarding obtaining or using the data.

## **9.3 Data Edits and Imputation**

### *9.3.1 Data Edits*

A series of checks and edits are conducted to ensure the accuracy, completeness, and reasonableness of data within each data file. Any structural issues are addressed during either data extraction or data cleaning.

Logic checks verify that the questionnaire worked as expected, particularly with respect to questionnaire routing. Errors identified during logic checking are addressed with two categories of data edits: flagging values that were incorrectly skipped and setting incorrectly populated values to null to indicate a valid missing value.

Additional checks identify unreasonable values that are not explicitly disallowed by the questionnaire (e.g., male beneficiaries reporting female-only conditions, such as cervical cancer). After investigation, such values are then addressed with global edits. The MCBS also conducts consistency checks to identify scenarios where respondents report inconsistent information (e.g., indicating that one is Medicaid eligible due to a certain condition, but not reporting having that same condition when asked about health status). Based on a thorough data review, these types of errors are addressed with edits during data cleaning.

Certain conventions are used in coding all variables to distinguish between questions that beneficiaries would not or could not answer and questions that were not asked. These conventional codes are depicted in Exhibit 9.3.1.

**Exhibit 9.3.1: Data Review and Editing Codes**

<b>Value</b>	<b>Format</b>	<b>Meaning</b>
.	INAPPLICABLE	Valid missing, inapplicable, a valid skip, missing with no expectation that a value should be present. Missing is '.' in numeric variables and blank in character variables.
.R	REFUSED	Valid missing, refused survey response
.D	DON'T KNOW	Valid missing, don't know survey response
.N	INVALID SKIP	Invalid missing, not ascertained, an invalid skip, a response should be present but is not
.E	EDITING CODE	Editing code, extreme value, unreasonable or out of range survey response
.S	SUPPRESSED*	Valid value suppressed due to suppression guidelines applied to Area Deprivation Index (ADI) variables

\*Code not applied to data collected by the Facility Instrument.

**9.3.2 Imputation**

In order to compile the most accurate and complete LDS, there are several types of adjustments applied to the MCBS data that compensate for missing information. Although a variety of methods are used in making the adjustments, adjustments of all types are governed by some basic principles. Information reported by the survey respondent is retained, even if it is not complete, unless strong evidence suggests that it is not accurate. When information is not reported during the interview, Medicare claims data and administrative data are the first choice as a source of supplementary, or in some cases, surrogate information.

There are several techniques for handling cases with missing data. One option is to impute the missing data. This can be done in such a way as to improve univariate tabulations, but techniques that retain correlation structure for multivariate analyses are extremely complex. For more discussion of imputation, see Kalton and Kasprzyk.<sup>33</sup>

The MCBS imputes income when income data are missing. Using the hot deck imputation method, the MCBS first imputes whether an income source exists (such as Social Security). If the income source exists, then the amount earned was imputed. A flag was created for each imputed variable indicating whether the corresponding value was imputed.

The 2021 Income and Assets imputation used IAQ data reported in 2022, as the 2022 IAQ asks about total income in the prior year (2021). The MCBS imputed different sets of variables for respondents to the 2022 IAQ and for the 2021 ever enrolled respondents who did not complete the 2022 IAQ. For the first group, the MCBS imputed a selection of variables from the 2022 IAQ. These included probe variables, which are indicators of whether the beneficiary and/or the spouse had income or asset items, and amount variables, which give the amount of the income or asset items that the beneficiary and/or the spouse had. For the second group, which includes beneficiaries living in a facility, only the amount of total income was imputed.

The MCBS created one imputation flag for each imputed variable. For the probes, only the hot deck imputation method was used, so the imputation flags indicate whether the probe was imputed or not. For the amounts, the MCBS used a variety of imputation methods. The imputation flags indicate whether the amount was not imputed, imputed by the hot deck method, imputed by the carry forward method, or imputed by data edits.

<sup>33</sup> Graham Kalton and Daniel Kasprzyk, "The Treatment of Missing Survey Data," *Survey Methodology* 12, no. 1 (1986): 1-16.

The imputation used information from the Income and Assets and Facility Assessments Survey File segments and demographic information from the Beneficiary Demographics and Household Characteristics segments.

Using information from the Cost Supplement File segments and Medicare claims data, the MCBS imputed missing payer and payment information for medical events reported in 2021. For beneficiaries living in a facility, medical event data are provided only from Medicare claims data. The MCBS first imputed whether a payer, such as an insurance plan, paid for a particular event. If the payer paid, then the amount paid was imputed next. Imputation was performed using the hot deck imputation method, and a flag was created for each imputed variable indicating whether the corresponding cost value was imputed.

Beginning with 2019, the MA encounter data were utilized to improve estimation of medical events and costs for those beneficiaries enrolled in MA. Beginning with 2020, these MA encounter data adjustments were improved to better reflect age and general health-related differences.

## 9.4 Weighting

### *9.4.1 Preparing Statistics (Using the Full Sample Weights)*

Two types of weights are provided, cross-sectional weights and longitudinal weights. Cross-sectional weights apply to the entire file of all those who completed an interview, either Community or Facility. Cross-sectional weights are available for the Survey File and the Cost Supplement File in each data year.

The data user may choose to conduct analyses of the Survey File data alone or use the Cost Supplement data to conduct joint analyses of both survey and cost and utilization data. Exhibit 9.4.1 provides an overview of the weights for the 2021 Survey File and Cost Supplement File. For analysis of Survey File data, there are two populations of inference that can be obtained through the use of two distinct weights. The ever enrolled Survey File weight is greater than zero for all beneficiaries in the Survey File. This weight segment is EVRWGTS, and the name of the weight is EEYRSWGT. The sum of this weight represents the population of beneficiaries who were entitled and enrolled in Medicare for at least one day at any time during the calendar year.

The continuously enrolled Survey File weight is greater than zero for the subset of beneficiaries in the Survey File who were continuously enrolled in Medicare from January 1, 2021, through completion of their fall interview. This weight segment is CENWGTS, and the weight is named CEYRSWGT. The population represented by the sum of this weight is the continuously enrolled population of Medicare beneficiaries who were enrolled from the first of the year through the Fall 2021.<sup>34</sup> Users should use the continuously enrolled Survey File weight (CEYRSWGT) for time series analysis of survey data across years.

Analyses of the Cost Supplement File data should be done with the Cost Supplement weight, which represents an ever enrolled population of Medicare beneficiaries enrolled in Medicare on at least one day at any time in 2021. To define the population, the MCBS creates a calendar history of a beneficiary's MCBS interviews. A number of eligibility checks are run against this calendar history to identify beneficiaries who met eligibility requirements for inclusion in the survey data for the calendar year, either because they were interviewed for a full year or interviewed until death or loss of Medicare entitlement. Beneficiaries who pass these eligibility checks become the population eligible for the Cost Supplement ever enrolled weight and the prescription medicine data files.

The Cost Supplement weights segment is named CSEVRWGT. The population represented by the sum of this weight is identical to the population represented by the sum of the ever enrolled Survey File weight, but it is

<sup>34</sup> This is identical to the historical Access to Care (ATC) cross-sectional weight that was available in previous years, 1991-2013.

populated for a smaller subset of respondents with complete cost and utilization data. Users wishing to conduct joint analysis of both Survey File and Cost Supplement File data should use the Cost Supplement File weights.

The weights mentioned above for the calendar year 2021 are full-sample weights. The term “full-sample” distinguishes these weights from the replicate weights used for variance estimation, as discussed in the Section 9.6: Variance Estimation. Additional information on using the weights is available in the file-specific MCBS Data User's Guide documents that accompany each data file release.

Longitudinal weights allow for the study of respondents across data years. The following longitudinal weights are provided with the 2021 Survey File and Cost Supplement LDS's.<sup>35</sup>

**Survey File Two-Year Longitudinal Weights (LNG2WGTS):** Two-year longitudinal weights apply to respondents who completed fall round interviews in the current and the preceding year. This set of weights can be used to study data trends over a two-year period and are populated only for members of the 2018, 2019, 2020 panels who had 2020 and 2021 Survey File data and were continuously enrolled for two years. The population represented by these weights is the population of beneficiaries enrolled on or before 1/1/2020 and surviving and entitled as of completion of the Fall 2021 interview. By applying these weights to data in the current and preceding year, users will be able to estimate change among the Medicare population who were alive for the full two-year period.

**Survey File Three-Year Longitudinal Weights (LNG3WGTS):** Three-year longitudinal weights apply to respondents who completed fall round interviews in the current and the two preceding years. This set of weights can be used to study data trends over a three-year period and are populated only for members of the 2018 and 2019 panels who were continuously enrolled during all of the years 2019-2021 and had Survey File data in 2019 and 2021. The resulting weights represent the population of Medicare beneficiaries who enrolled on or before 1/1/2019 and were still alive and entitled as of completion of the Fall 2021 interview. By applying these weights to data in the current and the three preceding years, users will be able to estimate change among the Medicare population who were alive for the full three-year period.

**Survey File Four-Year Longitudinal Weights (LNG4WGTS):** Four-year longitudinal weights apply to respondents who completed fall round interviews in the current and the three preceding years. This set of weights can be used to study data trends over a four-year period and are populated only for members of the 2018 Panel who were continuously enrolled during all of the years 2018-2021. The resulting weights represent the population of Medicare beneficiaries who enrolled on or before 1/1/2018 and were still alive and entitled as of completion of the Fall 2021 interview. By applying these weights to data in the current and the three preceding years, users will be able to estimate change among the Medicare population who were alive for the full four-year period.

**Cost Supplement Two-Year Longitudinal Weights (CSL2WGTS):** The two-year longitudinal weights are populated for members of the 2018, 2019, and 2020 Panels who were ever enrolled in Medicare at any time during both 2020 and 2021 and provided utilization and cost data for both years.

**Cost Supplement Three-Year Longitudinal Weights (CSL3WGTS):** The three-year longitudinal weights are populated for members of the 2018 and 2019 Panels who were ever enrolled in Medicare at any time during 2019, 2020, and 2021, and provided utilization and cost data for all three years.

<sup>35</sup> Beginning with the 2016 LDS, the Survey File longitudinal weight names reflect the number of years the beneficiary was enrolled in Medicare (i.e., LNG2WGTS weights are referred to as 'two-year' rather than 'one-year' as they represent the population continuously enrolled for two years). This change was made to align the names of the longitudinal weights in the Survey File LDS with the naming convention used for the Cost Supplement LDS.

The Survey File longitudinal weights are for analysis of Survey File data. Data users cannot use the Survey File longitudinal weights with Cost Supplement data. Users who want to analyze Survey File data along with utilization and cost data in the Cost Supplement should limit analysis to cases with a positive Cost Supplement weight.

### 9.4.2 Special Topical Segment Weights

There are ten 2021 Survey File LDS segments (FOODINS, INCASSET, MCREPLNQ, RXMED, ACCSSMED, USCARE, PNTACT, CHRNPAIN, TELEMED, COMMDOSE) that have special non-response adjusted weights. These segments are referred to as Topical segments because most of them were traditionally sourced from the Topical questionnaire sections (see Section 5.2.4 for more information). **To generate estimates using these Topical segment data, on their own or merged with another Survey File segment, always use the special full-sample and replicate weights included in the Topical segment.** Do not use the weights that appear in the separate weight segments (CENWGTS, EVRWGTS).

The questionnaire sections (or specific items within questionnaire sections) that are weighted separately are fielded in the winter and summer rounds following the data year, and/or are not administered to proxy respondents. Exhibit 9.4.1 crosswalks these questionnaire sections and their corresponding Topical segments.

**Exhibit 9.4.1:** Crosswalk of 2021 Questionnaire Sections and LDS Segments with Topical Weights

Questionnaire Section	Questionnaire Type	Data Collection Round	Topical LDS Segment
Access to Care (ACQ)	Core	Winter 2022	ACCSSMED
Chronic Pain (CPQ)*	Topical	Summer 2022	CHRNPAIN
COVID-19 (CVQ)	Topical	Winter 2022, Summer 2022	COMMDOSE
Income and Assets (IAQ)	Core	Summer 2022	INCASSET
Income and Assets (IAQ) – Food Insecurity items	Topical	Summer 2022	FOODINS
Knowledge and Decision Making (KNQ)	Topical	Winter 2022	MCREPLNQ
Satisfaction with Care (SCQ) – Patient Activation items*	Core	Fall 2021	PNTACT
Drug Coverage (RXQ)	Topical	Summer 2022	RXMED
Telemedicine (TLQ)	Core	Winter 2022	TELEMED
Usual Source of Care (USQ)	Core	Winter 2022	USCARE

\*CPQ and the Patient Activation items in SCQ are only administered to non-proxy respondents.

**There are three sets of full-sample and replicate weights for each Topical segment, one based on the 2021 Survey File ever enrolled population, one based on the 2021 Survey File continuously enrolled population, and one based on the 2021 Cost Supplement ever enrolled population. These weights may be used to conduct joint analyses of Topical segment data, Survey File data, and Cost Supplement File data.** Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes.

**There are no weights that support joint analysis between two Topical segments.** Each Topical segment has a different set of beneficiaries included. A user could merge data from one Topical segment onto another and then use one of the Topical segment's weights as the Baseline population, but the data will not

align and there will be gaps. For some combinations of the different questionnaire sections, the amount of missing data may be small enough that users could still conduct analyses.

The Topical weights that are described as "Survey File ever enrolled" weights (e.g., KNSEWT, INSEWT) correspond to the Survey File ever enrolled population and can be used to conduct analyses of the Topical data as representing the ever enrolled population and in conjunction with other Survey File data. The Topical weights that are described as "Survey File continuously enrolled" weights (e.g., KNSCWT, INSCWT) correspond to the Survey File continuously enrolled population and can be used to conduct analyses of the Topical data as representing the continuously enrolled population and in conjunction with other Survey File data. The Topical weights that are described as "Cost Supplement ever enrolled" weights (e.g., KNCEWT, INCEWT) correspond to the Cost Supplement ever enrolled population and can be used to conduct analyses of the Topical data as representing the ever enrolled population and in conjunction with Cost Supplement data. Weights corresponding to the Survey File ever enrolled population are not available for the Topical data. Because the Cost Supplement is available for a smaller subset of the Survey File population, for each Topical segment the number of beneficiaries with a continuously enrolled Topical weight is larger than the number of beneficiaries with an ever enrolled Topical weight.

The Topical segments, weights, and weight names are listed in Exhibit 9.4.2. Please also see the forthcoming *2021 MCBS Methodology Report* for additional information on the composition and derivation of the Topical weights.

Prefixes for the weights changed slightly in 2018 to accommodate the additional new population and make the population clearer to the data users.



**Exhibit 9.4.2:** 2021 MCBS Data Files Summary of Weights

Limited Data Set	Description	Segment	Full-Sample Weight	Replicate Weights	Population
Survey File	Continuously Enrolled Cross-Sectional Weights	CENWGTS	CEYRSWGT	CEYRS001-CEYRS100	Continuously enrolled from 1/1/2021 through the fall of 2021
Survey File	Ever Enrolled Cross-Sectional Weights	EVRWGTS	EEYRSWGT	EEYRS001-EEYRS100	Ever enrolled for at least one day at any time during 2021
Survey File	Continuously Enrolled Two-Year Longitudinal Weights	LNG2WGTS	L2YRSWGT	L2YRS001-L2YRS100	Continuously enrolled from 1/1/2020 through the fall of 2021
Survey File	Continuously Enrolled Three-Year Longitudinal Weights	LNG3WGTS	L3YRSWGT	L3YRS001-L3YRS100	Continuously enrolled from 1/1/2019 through the fall of 2021
Survey File	Continuously Enrolled Four-Year Longitudinal Weights	LNG4WGTS	L4YRSWGT	L4YRS001-L4YRS100	Continuously enrolled from 1/1/2018 through the fall of 2021
Cost Supplement File	Ever Enrolled Cross-Sectional Weights	CSEVRWGT	CSEVRWGT	CSEVR001-CSEVR100	Ever enrolled for at least one day at any time during 2021
Cost Supplement File	Two-Year Longitudinal Weights	CSL2WGTS	CSL2YWGT	CSL2Y001-CSL2Y100	Enrolled at any time during both 2020 and 2021
Cost Supplement File	Three-Year Longitudinal Weights	CSL3WGTS	CSL3YWGT	CSL3Y001-CSL3Y100	Enrolled at any time during each of 2019, 2020, and 2021
Survey File Topical Section	KNQ Survey File Ever Enrolled	MCREPLNQ	KNSEWT	KNSE1-KNSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022

Limited Data Set	Description	Segment	Full-Sample Weight	Replicate Weights	Population
Survey File Topical Section	KNQ Survey File Continuously Enrolled	MCREPLNQ	KNSCWT	KNSC1-KNSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	KNQ Cost Supplement Ever Enrolled	MCREPLNQ	KNCEWT	KNCE1-KNCE100	Ever enrolled in 2010 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	ACQ Survey File Ever Enrolled	ACCSSMED	ACSEWT	ACSE1-ACSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	ACQ Survey File Continuously Enrolled	ACCSSMED	ACSCWT	ACSC1-ACSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	ACQ Cost Supplement Ever Enrolled	ACCSSMED	ACCEWT	ACSFCE1-ACSFCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	USQ Survey File Ever Enrolled	USCARE	USSEWT	USSE1-USSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	USQ Survey File Continuously Enrolled	USCARE	USSCWT	USSC1-USSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	USQ Cost Supplement Ever Enrolled	USCARE	USCEWT	USCE1-USCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022



Limited Data Set	Description	Segment	Full-Sample Weight	Replicate Weights	Population
Survey File Topical Section	TLQ Survey File Ever Enrolled	TELEMED	TMSEWT	TMSE1-TMSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	TLQ Survey File Continuously Enrolled	TELEMED	TMSCWT	TMSC1-TMSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	TLQ Cost Supplement Ever Enrolled	TELEMED	TMCEWT	TMCE1-TMCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Winter 2022
Survey File Topical Section	IAQ Survey File Ever Enrolled	INCASSET	INSEWT	INSE1-INSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	IAQ Survey File Continuously Enrolled	INCASSET	INSCWT	INSC1-INSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	IAQ Cost Supplement Ever Enrolled	INCASSET	INCEWT	INCE1-INCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	IAQ Survey File Ever Enrolled	FOODINS	FDSEWT	FDSE1-FDSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022

Limited Data Set	Description	Segment	Full-Sample Weight	Replicate Weights	Population
Survey File Topical Section	IAQ Survey File Continuously Enrolled	FOODINS	FDSCWT	FDSC1-FDSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	IAQ Cost Supplement Ever Enrolled	FOODINS	FDCEWT	FDCE1-FDCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	PAQ Survey File Enrolled	PNTACT	PASEWT	PASE1-PASE100	Ever enrolled for at least one day at any time during 2021
Survey File Topical Section	PAQ Survey File Continuously Enrolled	PNTACT	PASCWT	PASC1-PASC100	Continuously enrolled from 1/1/2021 through the fall of 2022
Survey File Topical Section	PAQ Cost Supplement Ever Enrolled	PNTACT	PACEWT	PACE1-PACE100	Ever enrolled for at least one day at any time during 2021
Survey File Topical Section	RXQ Survey File Ever Enrolled	RXMED	RXSEWT	RXSE1-RXSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	RXQ Survey File Continuously Enrolled	RXMED	RXSCWT	RXSC1-RXSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	RXQ Cost Supplement Ever Enrolled	RXMED	RXCEWT	RXCE1-RXCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022

Limited Data Set	Description	Segment	Full-Sample Weight	Replicate Weights	Population
Survey File Topical Section	CPQ Survey File Ever Enrolled	CHRNPAIN	CPSEWT	CPSE1-CPSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	CPQ Survey File Continuously Enrolled	CHRNPAIN	CPSCWT	CPSC1-CPSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	CPQ Cost Supplement Ever Enrolled	CHRNPAIN	CPCEWT	CPCE1-CPCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	CVQ Survey File Ever Enrolled	COMMDOSE	VSSEWT	VSSE1-VSSE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	CVQ Survey File Continuously Enrolled	COMMDOSE	VSSCWT	VSSC1-VSSC100	Continuously enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022
Survey File Topical Section	CVQ Cost Supplement Ever Enrolled	COMMDOSE	VSCEWT	VSCE1-VSCE100	Ever enrolled in 2021 and still alive, entitled, and not living in a facility in Summer 2022

## 9.5 Using the Data

### 9.5.1 Merging Segments within 2021

Data users can merge segments within and/or across the Survey File and Cost Supplement File. Appendix C provides a hypothetical research question with sample SAS code for the construction of an analytic file using the 2021 Survey File LDS. For an example of how to merge data across the Survey File and Cost Supplement File LDS's, please see Appendix C.1: Using the Data of the *Data User's Guide: Cost Supplement File*. Note that although the MCBS data are nationally representative, they are not representative at the regional or state level and cannot be used to produce regional or state-level estimates. However, the data user can use the data to look for national trends across population groups.

## 9.6 Variance Estimation (Using the Replicate Weights)

### 9.6.1 Variables Available for Variance Estimation

In many statistical packages, the procedures for calculating sampling errors (e.g., variances, standard errors) assume that the data were collected in a simple random sample. Procedures of this type are not appropriate for calculating the sampling errors of statistics based upon a stratified, unequal-probability, multi-stage sample such as the MCBS. Unless the complex nature of the MCBS is taken into account, estimates of the variance of a survey statistic may be biased downward.

The MCBS includes variables to obtain weighted estimates and estimated standard errors using either the Taylor-series linearization approach or balanced repeated replication (BRR) method, also known as Fay's method. There is both serial and intra-cluster correlation in the MCBS data, including: sampling second-stage units within primary sampling units; sampling beneficiaries with second-stage units; and repeated observations of the selected beneficiary across time. Researchers should use the BRR method of variance estimation to account for various correlations. For details on the strengths and weaknesses of the two variance estimation methods, please refer to Wolter.<sup>36</sup>

To estimate variance using the balanced repeated replication method, a series of replicate weights are included in the 2021 Survey File release. As displayed in Exhibit 9.4.1 above, there are many types of full-sample weights, including those for cross-sectional analyses, longitudinal analyses, and analyses of Topical data. Each of these full-sample weights has a corresponding set of replicate weights. The replicate weights can be used to calculate standard errors of the sample-based estimates as described below. For the Survey File, the replicate cross-sectional weights are labeled CEYRS001 through CEYRS100 corresponding to the continuously enrolled weight CEYRSWGT, and EEYRS001 through EEYRS100 corresponding to the ever enrolled weight EEYRSWGT. These weights may be found on CENWGTS and EVRWGTS respectively. The Survey File replicate longitudinal weights are found on segments LNG2WGTS, LNG3WGTS, and LNG4WGTS.

The variables SUDSTRAT (sampling strata) and SUDUNIT (primary sampling unit) are used for variance estimation using the Taylor series linearization method. For examples and guidance on using the Taylor series linearization method of variance estimation or the BRR method, please see Appendix C.

<sup>36</sup> Kirk Wolter, *Introduction to Variance Estimation* (Springer Science & Business Media, 2007).

### 9.6.2 Variance Estimation for Analyses of Single Year of MCBS

Most commercial software packages today include techniques to accommodate the complex design, either through Taylor-expansion type approaches or replicate weight approaches. Among these are R®, STATA®, SUDAAN®, and the complex survey procedures in SAS.

### 9.6.3 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 researcher to subset data to a subgroup of interest and still produce unbiased standard error estimates.

## 9.7 Combining Multiple Years of Data

The MCBS is based on a rotating panel design, which allows for longitudinal analysis of up to four years when appropriate longitudinal weights are used. Multiple years of MCBS data can also be pooled to perform serial cross-sectional or pooled analysis. The appropriate method to combine data across years will depend on the analytic design of the study. Sample code is presented in Appendix C to demonstrate the steps involved in combining multiple years of data to perform two types of analysis: (1) Longitudinal analysis; (2) Pooled, cross-sectional analysis.

### 9.7.1 Longitudinal Analysis

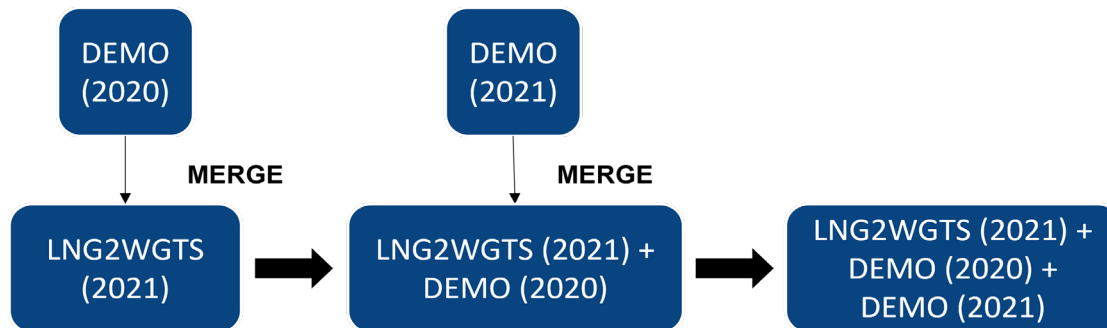
The study objective in longitudinal analysis is to assess changes over time for each sample person. The Survey File cross-sectional and longitudinal population definitions are consistent from year to year, so the data are comparable between years. The Cost Supplement cross-sectional population definition is also consistent and comparable from year to year.

Most longitudinal analyses require the data to be in long-format (i.e., repeated observations – each representing a calendar year the sample person was surveyed – are stored in a separate row for each sample person). To construct a longitudinal analytic dataset, the first step is to use the appropriate longitudinal weights file. For example, as shown in Exhibit 9.7.1, to assess changes over time beneficiaries who have been in the sample for at least two years – from CY2020 to CY2021 – the two-year longitudinal weights (i.e., one-year “backward longitudinal weights”) (LNG2WGTS) should be used.

Variables from current year files representing the outcome of interest should then be merged with the current year's longitudinal weights file. While merging, all observations in the weights file should be preserved. Next,

the same variables from the prior year's files should be merged with the current year's longitudinal weights file.

### Exhibit 9.7.1: Constructing a Longitudinal Analytic File



### Variance estimation for longitudinal analysis (using replicate weights)

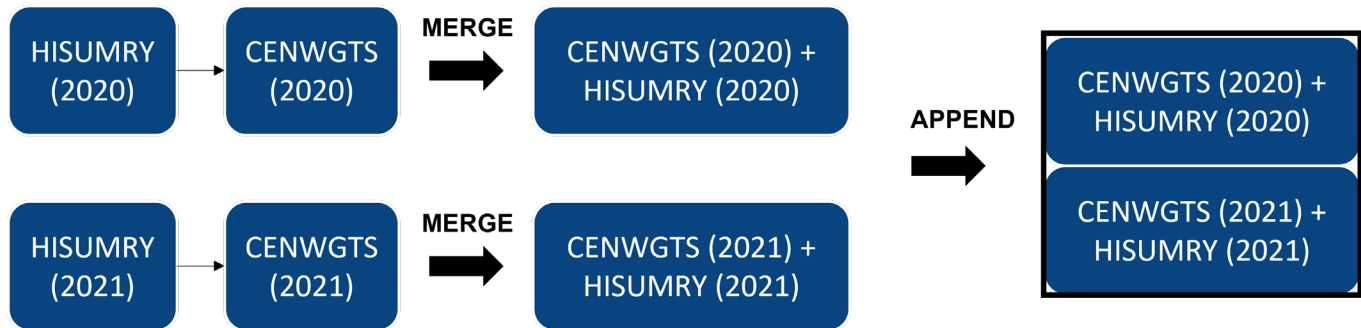
Just as there are full-sample longitudinal weights, there are corresponding sets of replicate weights. The replicate weights included in the longitudinal weights data files can be used to calculate standard errors of the sample-based estimates. The first set of replicate longitudinal weights is labeled L2YRS001 through L2YRS100 and may be found on the two-year longitudinal weights file (LNG2WGTS). The second set of replicate longitudinal weights is labeled L3YRS001 through L3YRS100 and may be found on the three-year longitudinal weights file (LNG3WGTS). The third set of replicate longitudinal weights in the Survey File LDS is labeled L4YRS001 through L4YRS100 and may be found on the four-year longitudinal weights file (LNG4WGTS).

For additional guidance, see the *MCBS Advanced Tutorial on Longitudinal Analysis*:

<https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Briefs>.

### 9.7.2 Repeated Cross-Sectional or Pooled Analysis

Multiple years of MCBS data can be pooled to perform serial cross-sectional or pooled analysis. Repeated cross-sectional analysis is used for analyzing changes in the Medicare population as a whole over time, while a pooled analysis will produce single cross-sectional estimates that cover a period of multiple years, usually to increase total sample sizes. In contrast, the longitudinal analysis described earlier is used to analyze beneficiary-level changes over time. Pooled data analysis yield estimates that are in effect a moving average of nationally representative year-specific estimates. The pooled estimates can be interpreted as being representative of the midpoint of the calendar year of the pooled period. Exhibit 9.7.2 demonstrates the steps involved in constructing a repeated cross-sectional or pooled analytic dataset using CY2020 and CY2021 data. For each year in the study, variables representing the outcome of interest should then be merged with the cross-sectional weights file. While merging, all observations in the weights file should be preserved. Next, the year-specific files are appended to produce the analytic dataset.

**Exhibit 9.7.2:** Constructing a Repeated Cross-Section or Pooled Analytic File**Variance estimation for repeated cross-sectional or pooled analysis (using replicate weights)**

Due to the rotating-panel and multistage-sampling design of the MCBS, there is both serial and intra-cluster correlation in the data when pooling multiple years of data. When conducting a pooled analysis, using the balanced half-sample method (also known as the balanced repeated replication, or BRR, method) of variance estimation throughout appropriately accounts for the various correlations due to sampling second-stage units within primary sampling units, sampling beneficiaries within second-stage units, and repeated observations of the selected beneficiary across time. The replicate cross-sectional weights are labeled CEYRS001 through CEYRS100 and can be found in each year's cross-sectional weights file (CENWGTS).

When conducting a repeated cross-sectional analysis to compare between two years, the difference or net change in a population characteristic is often of interest. In this type of analysis, a point estimate of year-to-year difference is straightforward to calculate; simply take difference between the two individual annual cross-sectional estimates. Each cross-sectional estimate included in the comparison can be calculated using the full-sample weights included in that year's data release.

Calculating variance and standard error estimates of net change is more complicated because of correlation between the two annual data sets. Correlation is present because many beneficiaries are retained from one year to the next, and because the same set of PSUs and SSUs are used for each year. We refer to these types of correlation as serial and intra-cluster correlation, respectively.

To estimate the variance of net change estimates, the researcher may rely on a program such as SAS or calculate them directly in their own custom program using a closed formula.

For additional guidance, see the *MCBS Advanced Tutorial on Pooled Cross-Sectional Analysis*: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Briefs>.

**SAS Method**

In SAS, point estimates of year-to-year differences, in addition to corresponding estimates of standard errors, can be generated using PROC SURVEYREG. To use this method, first concatenate the two annual datasets by stacking them together vertically, each including its corresponding set of weights, and define a YEAR variable to indicate which data year each of the two files represents. From this concatenated dataset, the example SAS code below will output estimates of the difference in estimates between the two years, using Cost Supplement weights as an example. The standard errors associated with these estimates are the desired estimated standard errors of the year-to-year net change.

```

PROC SURVEYREG VARMETHOD=BRR(FAY=.30);
  CLASS YEAR;
  MODEL variable = YEAR;
  LSMEANS YEAR / DIFF;
  WEIGHT CS1YRWGT;
  REPWEIGHT CS1YR001-CS1YR00100;
RUN;

```

This process can be repeated for any combination of variable and a complementary set of cross-sectional full-sample and replicate weights (e.g., Survey File continuously enrolled, Survey File ever enrolled, Cost Supplement ever enrolled weights).

### Direct Method

The variance of a difference can also be calculated directly using the formula below, which a researcher can incorporate into a custom program for producing a variety of estimates of net change. This process does not require concatenating two annual files together, although programmatically it may be useful to do so. Let  $X_0^t$  be the cross-sectional estimate of the mean of population characteristic Y from year t using the full-sample weights from that year, and let  $X_1^t, X_2^t, \dots, X_{100}^t$  be cross-sectional estimates of the same population mean from year t using each of the 100 corresponding replicate weights. Similarly, let  $X_0^{t-1}, X_1^{t-1}, X_2^{t-1}, \dots, X_{100}^{t-1}$  be analogous estimates of the same population characteristic Y from year t-1, using the weights from year t-1. Next, define a set of difference variables as  $D_0 = X_0^t - X_0^{t-1}$ ,  $D_1 = X_1^t - X_1^{t-1}$ , etc.

Then,

$$Var(D_0) = \frac{2.04}{100} \sum_{i=1}^{100} (D_i - D_0)^2$$

is an estimate of the variance of the estimate of net change from year t-1 to year t. The square root of this estimate is the estimated standard error.



## 10. DATA FILE NOTES

This section is a collection of information about various data fields present in the Survey File segments. The MCBS does not attempt to present information on every survey data field; rather, it concentrates its efforts on data fields where additional clarity or detail may be useful. The MCBS starts with information that is applicable globally, followed by specific information on individual segments, presented in the same sequence as the segments appear in the Codebook.

### 10.1 Global Information

#### *10.1.1 BASEID*

The BASEID key identifies the person interviewed. It is an 8-digit element, consisting of a unique, randomly assigned 7-digit number concatenated with a single-digit check digit.

LDS segments may vary in the number of BASEIDs. This variation may occur for several reasons. First, some segments include data from Community components and others from Facility components with different numbers of beneficiaries providing responses. Second, there are also differences in the number of beneficiaries by the specific round completed. Third, the use of ever enrolled or continuously enrolled weights in constructing the segments may result in differences.

#### *10.1.2 Missing Values*

Various special values indicate the reason why some data are missing, such as .R for "refused," .D for "don't know." See Exhibit 9.3.1 above for additional values.

#### *10.1.3 Derived and Administrative Variables*

Variables that were derived or created by combining two or more survey variables are preceded with the characters "D\_", such as D\_ERVIST. CMS may create or modify variables in order to recode data items (e.g., to protect the confidentiality of survey responses) or to globally edit some variables. Variables preceded by the character "H\_", such as H\_DOB, come from CMS administrative source files.

Several segments include variables indicating the length of time the beneficiary spent doing something, such as waiting in the hospital emergency room or waiting for an appointment. In the questionnaire, the length of time is stored in a continuous variable while the corresponding unit is stored in a categorical variable (e.g., hours, minutes, or hours and minutes; days, weeks, or months). These two variables are used to derive a single variable indicating the length of time in the most appropriate unit of time. For example, on the ACCSSMED segment, D\_ERTIME contains the length of time spent waiting in the hospital emergency room in minutes while D\_MDAPPT contains the length of time spent waiting for a doctor's appointment in days.

#### *10.1.4 Initial Interview Variables*

Some questions are asked in only two scenarios: 1) it is the case's Baseline (initial) interview or 2) it is the first time the case has crossed to a new component (e.g., the case crosses from the Community component to the Facility component for the first time). These "initial interview variables" are not asked again during subsequent interviews because the responses are not likely to change. Such questions include "Have you ever served in the armed forces?" and "What is the highest grade of school you ever completed?" To maximize the usefulness of this release as a cross-sectional file, these data are pulled forward from the Baseline interview or

the first time the case was interviewed in a given component, as applicable. Variables that have been processed this way are listed in Appendix D.

### *10.1.5 Ever Variables*

Many items in the MCBS ask respondents whether they have ever had certain experiences, such as ever being told they have a chronic condition, receiving a treatment, or doing a specific activity (such as ever accessing the official Medicare website). Such questions include "Have you ever been diagnosed with diabetes?" and "Have you smoked at least 100 cigarettes in your entire life?" Their responses are coded affirmatively if the respondent reports "yes" to having had that condition or experience.

These items are administered to respondents in certain scenarios. For select "ever" variables administered in the HFQ, there are different versions of each question, depending on whether a respondent is in the Incoming Panel sample or Continuing sample. These versions are combined into recoded variables to provide a complete picture of the response. All Incoming Panel sample respondents are asked if they have ever had certain conditions or experiences. Once a condition or experience is reported, the CAPI questionnaire logic retains that information for subsequent interviews. For variables that ask about conditions that cannot change after diagnosis, such as Alzheimer's, once an affirmative response is given, respondents are not asked again. However, if a negative response is given, respondents are asked annually thereafter if they had that specific condition or experience in the past year. For conditions that can change after diagnosis or can be reoccurring, such as high blood pressure, respondents are asked annually thereafter if they had that specific condition or experience in the past year. All data from a beneficiary from the current survey year and all previous years are used to determine whether the beneficiary has ever had a condition or experience.

"Ever" variables in the NAQ and KNQ are collected and processed in a similar manner to the HFQ "ever" variables, except that the NAQ and KNQ "ever" variables use only one version of each question (rather than two separate versions depending on beneficiary sample type).

For more information about "ever" variables pertaining to chronic conditions, see the data notes for the Chronic Conditions segment (CHRNCOND) in Section 10.3.5. For more information about "ever" variables pertaining to beneficiary knowledge about the Medicare open enrollment period and Medicare-covered expenses, see the data notes for the Medicare Plan Beneficiary Knowledge segment (MCREPLNQ) in Section 10.3.21. For more information about "ever" variables pertaining to beneficiary's nicotine and alcohol use, see the data notes for the Nicotine and Alcohol segment (NICOALCO) in Section 10.3.26.

### *10.1.6 Data Editing*

Data are edited for consistency and to provide users with files that are easily used for analysis.

### *10.1.7 Other Specify Questions*

A subset of MCBS questionnaire items include closed ended responses with "other specify" options. These options allow respondents to provide answers that are not included in the existing code frame and are useful for questions with a wide range of potential responses (e.g., types of problems experienced during attempts to obtain care). In the event that an "other specify" option is selected, interviewers record actual responses verbatim. Verbatim responses are not released.

The MCBS programmatically identifies "other specify" responses that are sufficiently similar to existing code frame options and back codes responses into existing response option categories as appropriate. Often there will be more than one answer to a single question. In these cases, responses are recoded into several variables, all of which contain categorized data. Code lists are updated when necessary to incorporate responses that are frequently provided in "other specify" response options.

### *10.1.8 Interview Mode Indicator*

Due to the COVID-19 pandemic, MCBS data collection switched to phone-only interviews in March 2020 and throughout most of 2021, with a return to some in-person interviewing beginning in November 2021. MCBS data collection will include both in-person and phone interviewing going forward. The Interview Characteristics (INTERV) segment includes a flag to indicate whether the interview was conducted in-person (INTMODE = 1) or by telephone (INTMODE = 2). Topical segments that include data collected in Winter 2022 or Summer 2022 include a third option to indicate a combination of the two modes ("hybrid", INTMODE = 3). Data users should note potential mode effects when conducting analyses. Mode effects are discussed in further detail in the *2021 MCBS Methodology Report*.

### *10.1.9 Consistency with Medicare Program Statistics*

In general, MCBS estimates may differ from Medicare program statistics using 100 percent administrative enrollment data. There are several reasons for the differences. The most important reason for the difference is that the administrative enrollment data may include people who are no longer alive. This may occur where people have entitlement, such as for Part A only, and receive no Social Security check. When field interviewers try to locate these beneficiaries for interviews, they establish the fact of these deaths. Unrecorded deaths may still be present on the Medicare Administrative enrollment data. The MCBS makes every effort to reconcile the survey information against the administrative data when possible. Other reasons, such as sampling error, may also contribute to differences between MCBS estimates and Medicare program statistics. Lastly, estimates may differ because Medicare program statistics adjust for partial enrollment. Medicare program estimates use a "person year" calculation where partial enrollment is counted as a fraction for the year. In contrast, the MCBS gives each beneficiary the same weight regardless of full or partial enrollment during the year, thus leading to differences in estimates using Medicare published statistics and MCBS data.

### *10.1.10 Do Administrative Data Override Survey-Reported Data?*

In linking survey-reported and administrative data, the MCBS keep records from both sources to provide more complete data. Indicators in the file will usually specify if the information is survey-reported only, administrative data only, or both. Data that are only administrative are indicated as such in the data documentation and codebook.

## **10.2 Survey File Segment Information**

Below is the information regarding each segment within the Survey File release, presented in alphabetical order. The notes have been organized into three main categories of information.

1. Core Content – a description of the main subject of the data.
2. Variable Definitions – definitions of derived variables and/or variables that require additional explanation regarding their construction. Note: The variables listed are not a comprehensive list of all variables in each segment. The Codebook provides information on all variables in each segment.
3. Special Notes – additional background information that data users may find helpful for constructing analyses.

## 10.3 Survey File Segment Descriptions

### *10.3.1 Access to Care (ACCESSCR)*

#### **10.3.1.1 Core Content**

The Access to Care segment contains information from the HFQ section in the fall round. General questions are asked about the beneficiary's ability to access medical services. This segment also contains information on medical debt and the reasons beneficiaries cannot access the care they need.

#### **10.3.1.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.1.3 Special Notes**

Respondents are asked why the beneficiary had trouble getting health care or scheduling a health care appointment in an open-ended format (e.g., "What were the reasons the doctor's office offered as an explanation for not scheduling an appointment with you?"). The respondents answer these questions in their own words, and interviewers select the response option(s) from a predefined code list that best matched the respondents' answer(s). These questions are select-all-that-apply so that respondents may provide multiple answers to each question, and each answer is stored in its own analytic variable.

If the respondent reports a reason that is not included in the predefined code list, the interviewer documents their response verbatim in an "other specify" variable that is not released. The "other specify" response is back coded as necessary into the predefined code list.

If the respondent reports that the beneficiary could not schedule an appointment because the doctor is not accepting new Medicare patients or the doctor does not accept Medicare at all, the respondent is then asked at variable OFFEXPLN whether the doctor's office explained why this is the case. If the doctor's office provided an explanation to the respondent, this explanation is recorded verbatim at OFFEXVB1 but not released.

### *10.3.2 Access to Care, Medical Appointments (ACCSSMED)*

#### **10.3.2.1 Core Content**

The Access to Care, Medical Appointments segment contains information from the ACQ section and the emergency room, outpatient, medical provider, dental, vision, and hearing, and prescription medicine utilization sections asked in the winter round following the year of interest. General questions are asked about the beneficiary's access to all types of medical services and prescription medicines, the reasons for their visits, and the reasons for any forgone care or prescription medicines.

#### **10.3.2.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.2.3 Special Notes**

Respondents are asked why the beneficiary did or did not receive different types of medical services or prescription medicines in an open-ended format (e.g., "What was the reason you saw the doctor?"). The respondents answer these questions in their own words, and interviewers select the response option(s) from a predefined code list that best matched the respondents' answer(s). These questions are select-all-that-apply

so that respondents may provide multiple answers to each question, and each answer is stored in its own analytic variable.

If the respondent reports a reason that is not included in the predefined code list, the interviewer documents their response verbatim in an "other specify" variable that is not released. The "other specify" response is back coded as necessary into the predefined code list.

Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the winter data collection period. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

### *10.3.3 Administrative Utilization Summary (ADMNUTLS)*

#### **10.3.3.1 Core Content**

The Administrative Utilization Summary segment contains information on Medicare program expenditures and utilization taken directly from the Medicare Administrative enrollment data.

#### **10.3.3.2 Variable Definitions**

Except as noted otherwise, the variables in this segment are derived from summarizing data from CMS' Medicare Administrative enrollment data and the Medicare Administrative utilization and payment records. Administrative data available as of December 31, 2021 were summarized to create these data items.

**H\_HHASW:** One or more home health agency (HHA) visits in the calendar year is indicated by a 1. This is triggered by a value (greater than zero) found in the home health visits field (H\_HHVIS). Otherwise, the value for H\_HHASW is 2.

**H\_HOSSW:** One or more hospice bills in the calendar year is indicated by a 1. This is triggered by a value (greater than zero) found in the hospice Medicare payments (H\_HOSPMT) field or the hospice stays (H\_HOSSTY) field. Otherwise, the value for H\_HOSSW is 2.

**H\_INPSW:** One or more inpatient discharges in the calendar year is indicated by a 1. This is triggered by a value (greater than zero) found in the acute inpatient stays (H\_ACTSTY) field or the other inpatient stays (H\_OIPSTY) field. Otherwise, the value for H\_INPSW is 2.

**H\_OUTSW:** One or more outpatient visits in the calendar year is indicated by a 1. This is triggered by a value (greater than zero) found in the hospital outpatient visits (H\_HOPVIS) field or hospital outpatient emergency room visits (H\_HOP\_ER) field. Otherwise, the value for H\_OUTSW is 2.

**H\_PBSW:** One or more Part B claims in the calendar year is indicated by a 1. This is triggered by a value (greater than zero) found in any of the following fields: H\_PHYPMT, H\_PHYEVT, H\_PB\_DEV, H\_PB\_DRG, H\_PB\_OTH, H\_PB\_OEV, H\_DMEEVT, H\_DMEPMT, H\_TSTEVT, H\_TSTPMT, H\_ANEVT, H\_ANEPMT, H\_ASCEVT, H\_ASCPMT, H\_DIAEVT, H\_DIAPMT, H\_EMEVT, H\_EMPMT, H\_IMGEVT, H\_IMGPMPT, and H\_PTBRMB. Otherwise, the value for H\_PBSW is 2.

**H\_SNFSW:** One or more skilled nursing facility (SNF) admissions in the calendar year is indicated by a 1. This is triggered by a value (greater than zero) found in any of the following fields: H\_SNFPMT, H\_SNFSTY, H\_SNFDAY. Otherwise, the value for H\_SNFSW is 2.

H\_PTARMB: Total Part A reimbursement in the calendar year. It is a sum of calendar year reimbursements for HHA Part A, Hospice, Inpatient, and SNF. The CLM\_PMT\_AMT field is selected for each claim type in preparing this calculation. The CLM\_VAL\_CD = "64" is used to determine HHA Part A.

H\_PTBRMB: Total Part B reimbursement in the calendar year. It is a sum of calendar year reimbursements for HHA Part B, Physician, and Outpatient. The CLM\_PMT\_AMT field is selected for each claim type in preparing this calculation. The CLM\_VAL\_CD = "65" is used to determine HHA Part B. "Physician" as noted in the "sum" statement above consisted of BCARRIER\_CLAIMS and DME\_CLAIMS.

H\_ACTPMT: Acute Inpatient Medicare Payments is the sum of the Medicare claim payment amounts (CLM\_PMT\_AMT from each source claim) in the acute inpatient hospital setting in the calendar year. To obtain the total acute hospital Medicare payments, take this variable and add in the annual per diem payment amount (H\_ACTMPT + H\_ACTPRD).

H\_ACTPRD: Acute Inpatient Hospital Pass-thru Per Diem Payments is the sum of all the pass-through per diem payment amounts (CLM\_PASS\_THRU\_PER\_DIEM\_AMT from each source claim) in the acute inpatient hospital setting for the calendar year. Medicare payments are designed to include certain "pass-through" expenses such as capital-related costs, direct medical education costs, kidney acquisition costs for hospitals that are renal transplant centers, and bad debts. This variable is the sum of all the daily payments for pass-through expenses. It is not included in the Medicare Payment amount (H\_ACTPMT). To determine the total Medicare payments for acute hospitalizations for the beneficiary, this field must be added to the total Medicare payment amount for acute inpatient hospitalizations (H\_ACTMPT + H\_ACTPRD).

H\_ACTSTY: Acute Inpatient Stays is the count of acute inpatient hospital stays (unique admissions, which may span more than one facility) for the calendar year. An acute inpatient stay is defined as a set of one or more consecutive acute inpatient hospital claims where the beneficiary is only discharged on the most recent claim in the set. If a beneficiary is transferred to a different provider, the acute stay is continued even if there is a discharge date on the claim from which the beneficiary was transferred.

H\_ACTDAY: Acute Inpatient Medicare Covered Days is the count of Medicare covered days in the acute inpatient hospital setting for the calendar year.

H\_ACTBPT: Acute Inpatient Beneficiary Payments is the sum of Medicare coinsurance and deductible payments in the acute inpatient hospital setting for the calendar year. The total acute hospitalization beneficiary payments are calculated as the sum of the beneficiary deductible amount and coinsurance amount for all acute inpatient claims where the CLM\_PMT\_AMT >= 0.

H\_IP\_ER: Inpatient Emergency Room Visits is the count of emergency department (ED) claims in the inpatient setting for the year. The revenue center codes indicating emergency room use were 0450, 0451, 0452, 0456, and 0459.

H\_OIPPMT: Other Inpatient Hospital Medicare Payments is the sum of the Medicare claim payment amounts (CLM\_PMT\_AMT from each source claim) in the other inpatient (OIP) settings for the calendar year. To obtain the total OIP Medicare payments, take this variable and add in the annual per diem payment amount (H\_OIPPMT + H\_OIPPRD). These OIP claims are a subset of the IP claims consisting of data from IP settings such as long-term care hospitals, inpatient psychiatric facilities, inpatient rehabilitation facilities, and other types of IP facilities such as children's hospitals or cancer centers.

H\_OIPPRD: Other Inpatient Pass-thru Per Diem Payments is the sum of all the pass-through per diem payment amounts (CLM\_PASS\_THRU\_PER\_DIEM\_AMT from each source claim) in the OIP setting for the calendar year. This variable is the sum of all the daily payments for pass-through expenses. It is not included in the Medicare payment amount (H\_OIPPMT). To determine the total Medicare payments for other non-acute hospitalizations



for the beneficiary, this field must be added to the total Medicare payment amount for other hospitalizations (H\_OIPPMT + H\_OIPPRD).

H\_OIPSTY: Other Inpatient Stays is the count of hospital stays (unique admissions, which may span more than one facility) in the non-acute inpatient setting for the calendar year. A non-acute inpatient stay is defined as a set of one or more consecutive non-acute inpatient claims where the beneficiary is only discharged on the most recent claim in the set.

H\_OIPDAY: Other Inpatient Hospital Covered Days is the count of covered days in the non-acute inpatient hospital setting for the calendar year. This variable equals the sum of the CLM\_UTLZTN\_DAY\_CNT variables on the source claims.

H\_OIPBPT: Other Inpatient Beneficiary Payments is the sum of Medicare coinsurance and deductible payments in the nonacute inpatient hospital setting for the year. The total OIP beneficiary payments are calculated as the sum of NCH\_BENE\_IP\_DDCTBL\_AMT and NCH\_BENE\_PTA\_COINSRNC\_LBLTY\_AM for all relevant claims where the CLM\_PMT\_AMT  $\geq 0$ .

H\_SNFPMT: SNF Medicare Payments is the total Medicare payments in the SNF setting for the calendar year.

H\_SNFSTY: SNF Stays is the count of SNF stays (unique admissions, which may span more than one facility) for the calendar year. A SNF stay is defined as a set of one or more consecutive SNF claims where the beneficiary is only discharged on the most recent claim in the set.

H\_SNFDAY: SNF Medicare Covered Days is the count of Medicare covered days in the SNF setting for the calendar year. This variable equals the sum of the CLM\_UTLZTN\_DAY\_CNT variables on the source claims.

H\_SNFBPT: Skilled Nursing Facility Beneficiary Payments is the sum of Medicare coinsurance and deductible payments in the SNF setting for the calendar year. The total beneficiary payment is calculated as the sum of the beneficiary deductible amount and coinsurance amount (variables NCH\_BENE\_IP\_DDCTBL\_AMT and NCH\_BENE\_PTA\_COINSRNC\_LBLTY\_AM) for all SNF claims where the CLM\_PMT\_AMT  $\geq 0$ .

H\_HOSPMT: Hospice Medicare Payments is the total Medicare payments in the hospice (HOS) setting for the calendar year.

H\_HOSSTY: Hospice Stays is the count of stays (unique admissions, which may span more than one facility) in the HOS setting for the calendar year. A HOS stay is defined as a set of one or more consecutive hospice claims where the beneficiary is only discharged on the most recent claim in the set.

H\_HOSDAY: Hospice Medicare Covered Days is the count of Medicare covered days in the HOS setting for the calendar year. This variable equals the sum of the CLM\_UTLZTN\_DAY\_CNT variables on the source claims.

H\_HHPMT: Home Health Medicare Payments is the total Medicare payments in the home health (HH) setting for the calendar year.

H\_HHVIS: Home Health Visits is the count of HH visits for the calendar year.

H\_HOPPMT: Hospital Outpatient Medicare Payments is the total Medicare payments in the hospital outpatient (HOP) setting for the calendar year.

H\_HOPVIS: Hospital Outpatient Visits is the count of unique revenue center dates (as a proxy for visits) in the HOP setting for the calendar year.

H\_HOP\_ER: Hospital Outpatient Emergency Room Visits is the count of unique emergency department revenue center dates (as a proxy for an ED visit) in the HOP claims for the calendar year. Revenue center codes indicating emergency room use are 0450, 0451, 0452, 0456, or 0459.

H\_HOPBPT: Hospital Outpatient Beneficiary Payments is the sum of Medicare coinsurance and deductible payments in the HOP setting for the calendar year. The total beneficiary payment is calculated as the sum of the beneficiary deductible amount and coinsurance amount (variables REV\_CNTR\_CASH\_DDCTBLE\_AMT and REV\_CNTR\_COINSRNC\_WGE\_ADJSTD\_C) for all HOP claims where the CLM\_PMT\_AMT  $\geq 0$ .

H\_PB\_DRG: Part B Drug Medicare Payments is the total Medicare payments for Part B drugs for the calendar year. Part B drug claims are a subset of the claims in the Part B Carrier and DME claims.

H\_PB\_DEV: Part B Drug Events is the count of events in the Part B drug setting for the calendar year. An event is defined as each line item that contains the relevant service.

H\_BPTDRG: Part B Drug Beneficiary Payments is the sum of coinsurance and deductible payments for Part B drugs for the calendar year. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT + LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines. The Part B drug claims are identified by BETOS codes (CCW variable BETOS\_CD with values of "D1G", "O1D", "O1E", "O1G", "I1E", or "I1F").

H\_EMPMT: Evaluation and Management Medicare Payments is the total Medicare payments for the Part B evaluation and management (E&M) services for a given year. E&M claims are a subset of the claims in the Part B Carrier and DME claims and a subset of physician claims.

H\_EMEVT: E&M Events is the count of events for the Part B E&M services for the calendar year. An event is defined as each line item that contains the relevant service.

H\_EMBPT: Evaluation and Management Beneficiary Payments is the sum of coinsurance and deductible payments for the Part B E&M services for the calendar year. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines. E&M claims are a subset of the claims in the Part B Carrier and DME data files and a subset of physician claims. The E&M claims are defined as those with a line BETOS code (BETOS\_CD) where the first digit = "M" (but is not M1A or M1B – which are categorized as physician office care in this file – see PHYS\_MDCR\_PMT).

H\_PHYPMT: Part B Physician Medicare Payments is the total Medicare payments for the Part B physician office services (PHYS) for the calendar year. PHYS claims are a subset of the claims in the Part B Carrier and DME claims and a subset of physician evaluation and management claims (note that E&M are tabulated separately).

H\_PHYEVT: Part B Physician Events is the count of events for Part B PHYS for the calendar year. An event is defined as each line item that contains the relevant service.

H\_PHYBPT: Part B Physician Beneficiary Payments is the sum of coinsurance and deductible payments for the Part B PHYS for the calendar year. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines. The PHYS claims are defined as those with a line BETOS code (BETOS\_CD) where the first three digits = M1A or M1B (the remainder of physician services which occur in different settings appear in EM\_MDCR\_PMT).

H\_OPRPMT: Other Procedures Medicare Payments is the total Medicare payments for services considered Part B other procedures (i.e., not anesthesia or dialysis) for the calendar year. Claims for other procedures are a subset of the claims and a subset of procedures in the Part B Carrier claims.



H\_OPREVT: Other Procedures Events is the count of events for Part B other procedures for the calendar year. An event is defined as each line item that contains the relevant service. Claims for other procedures are a subset of the claims in the Part B Carrier claims.

H\_OPRBPT: Other Procedures Beneficiary Payments is the sum of coinsurance and deductible payments for services considered Part B other procedures for the calendar year. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines. Claims for other procedures are a subset of the claims in the Part B Carrier data file. These other procedure claims are defined as those with a line BETOS code (BETOS\_CD) where the first 2 digits are ("P1", "P2", "P3", "P4", "P5", "P6", "P7", or "P8").

H\_DMEPMT: Durable Medical Equipment Medicare Payments is the total Medicare payments for Part B durable medical equipment (DME) for the calendar year. Claims for DME are a subset of the claims in the Part B Carrier and DME claims.

H\_DMEEVT: Durable Medical Equipment Events is the count of events in the Part B DME for the calendar year. An event is defined as each line item that contains the relevant service.

H\_DMEBPT: Durable Medical Equipment Beneficiary Payments is the total Medicare payments for Part B DME for the calendar year.

H\_PB\_OTH: Other Part B Carrier Medicare Payments is the total Medicare payments from Part B Carrier and DME claims which appear in specific settings for the calendar year. Claims for other carrier/DME claims are a subset of the claims in the Part B Carrier and DME claims. Types of services which may have been summarized in this other carrier category (OTH) include ambulance, chiropractor, chemotherapy, vision, hearing and speech services, etc.

H\_PB\_OEV: Other Part B Carrier Events is the count of events in the Part B other setting for the calendar year, which includes Part B Carrier and DME claims which appear in specific settings for the year. An event is defined as each line item that contains the relevant service.

H\_BPTOTH: Other Part B Carrier Beneficiary Payments is the sum of coinsurance and deductible payments from Part B Carrier and DME claims for the calendar year, which appear in settings other than the 10 specific categories in this segment. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines.

H\_PTDPMT: Part D Medicare Payments is the dollar amount that the Part D plan covered for all covered drugs for the calendar year. The variable is calculated as the sum of the plan payments for covered Prescription Drug Events (PDEs) (CVRD\_D\_PLAN\_PD\_AMT) and the low-income cost sharing subsidy amount (LICS\_AMT) during the year.

H\_PTDEVT: Part D Events is the count of events for Part D drugs for the calendar year (i.e., a unique count of the PDE\_IDs). An event is a dispensed (filled) drug prescription that appears on the source PDE claims.

H\_PTDBPT: Part D Beneficiary Payments is the dollar amount that the beneficiary paid for all PDEs for the calendar year, without being reimbursed by a third party. The amount includes all copayments, coinsurance, deductible, or other patient payment amounts, and comes directly from the source PDEs.

H\_PTDTOT: Part D Total Prescription Costs is the gross drug cost (TOT\_RX\_CST\_AMT on the source claims) of all Part D drugs for the calendar year. This value includes the ingredient cost, dispensing fee, sales tax (if applicable), and vaccine administration fee.

H\_ASCEVT: Ambulatory Surgery Center Events is the count of events in the Part B ambulatory surgery center (ASC) setting for the calendar year. An event is defined as each line item that contains an ambulatory surgery center service.

H\_ASCBPT: Ambulatory Surgery Center Beneficiary Payments is the sum of coinsurance and deductible payments in the Part B ASC setting for the calendar year. The total beneficiary payment is calculated as the sum of the LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for all relevant lines. ASC claims are a subset of the claims in the Part B Carrier data file. The ASC claims are identified by the claim lines where the LINE\_CMS\_TYPE\_SRVC\_CD = "F".

H\_ANEPMT: Anesthesia Medicare Payments is the total Medicare payments for Part B anesthesia services (ANES) for the calendar year. Anesthesia claims are a subset of the claims and a subset of procedures in the Part B Carrier claims.

H\_ANEVT: Anesthesia Events is the count of events for Part B ANES for the calendar year. An event is defined as each line item that contains the relevant service.

H\_ANEBPT: Anesthesia Beneficiary Payments is the sum of coinsurance and deductible payments for Part B ANES for the calendar year. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines. ANES claims are a subset of the claims and a subset of procedures in the Part B Carrier data file. ANES claims are defined as those with a line BETOS code (BETOS\_CD) where the first 2 digits = "P0" and the CARR\_LINE\_MTUS\_CD = "2".

H\_DIAPMT: Dialysis Medicare Payments is the total Medicare payments for Part B dialysis services (primarily the professional component since treatments are covered in hospital outpatient) for the calendar year. Dialysis claims are a subset of the claims and a subset of procedures in the Part B Carrier claims.

H\_DIAEVT: Dialysis Events is the total Medicare payments for Part B dialysis services for the calendar year. An event is defined as each line item that contains the relevant service.

H\_DIABPT: Dialysis Beneficiary Payments is the total Medicare payments for Part B dialysis services for the calendar year. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines.

H\_IMGPMT: Imaging Medicare Payments is the total Medicare payments for imaging services (IMG) for the calendar year. Claims for imaging procedures are a subset of the claims and a subset of procedures in the Part B Carrier and DME claims.

H\_IMGEVT: Imaging Events is the count of events for IMG for the calendar year. An event is defined as each line item that contains the relevant service.

H\_IMGBPT: Imaging Beneficiary Payments is the sum of coinsurance and deductible payments for IMG for the calendar year. The total beneficiary payments are calculated as the sum of LINE\_COINSRNC\_AMT and LINE\_BENE\_PTB\_DDCTBL\_AMT for the relevant lines. These IMG claims are defined as those with a line BETOS code (BETOS\_CD) where the first digit = I (except for "I1E", or "I1F" – which are considered Part B drugs).

H\_TSTPMT: Tests Medicare Payments is the total Medicare payments for Part B tests for the calendar year. Claims for tests are a subset of the claims in the Part B Carrier claims.

H\_TSTEVT: Tests Events is the count of events for Part B tests for the calendar year. An event is defined as each line item that contains the relevant service. Claims for tests are a subset of the claims in the Part B Carrier claims.

H\_TSTBPT: Tests Beneficiary Payments is the sum of coinsurance and deductible payments for Part B tests for the calendar year.

H\_PTDFIL: Part D prescribing events (PDE) consist of highly variable days' supply of the medication. This derived variable creates a standard 30 days' supply of a filled Part D prescription and counts this as a "fill." The Part D fill count does not indicate the number of different drugs the person is using, only the total months covered by a medication (e.g., if a patient is receiving a full year supply of a medication, whether this occurs in one transaction or 12 monthly transactions, the fill count = 12; if the patient is taking three such medications, the fill count = 36).

H\_READMT: Acute Inpatient Hospital Readmissions is the count of hospital readmissions in the acute inpatient setting for the calendar year. The original admission must have been in the year of the data file, but it is possible for the readmission claim to have occurred in January of the following year. A beneficiary is considered to be readmitted when they have an acute inpatient stay with a discharge status that is not expired or left against medical advice within 30 days of a previous acute inpatient stay with a discharge status that is also not expired or left against medical advice.

### 10.3.3.3 Special Notes

For easier comparison of groups of beneficiaries by the number and cost of medical services they have received, the Administrative Utilization Summary includes a summary of all Medicare bills and claims for calendar year 2021, as received and processed by CMS through December 2022 for the 2021 benefit year.

The utilization summary represents services rendered and reimbursed under Medicare FFS in the calendar year 2021. If a beneficiary used no Medicare services at all or was a member of a coordinated or managed care plan that does not submit claims to a fiscal intermediary or carrier, all program payment summary variables will be null. If the beneficiary used no services of a particular type (e.g., inpatient hospitalization), the variables relating to those benefits will be null.

For additional information on administrative data items, please see the Master Beneficiary Summary - Cost and Use Segment Data Dictionary Codebook: <https://www.ccwdata.org/web/guest/data-dictionaries>.

## 10.3.4 Assistance (ASSIST)

### 10.3.4.1 Core Content

The Assist segment contains information on each person identified as helping the beneficiary with ADLs or IADLs, including the helper's age, relationship to the beneficiary, and the types of assistance that the beneficiary receives (e.g., assistance with dressing, shopping, eating) from each identified helper. The number of records in the Assist segment reflects the number of persons identified as having assisted the beneficiary with one or more ADL or IADLs. Therefore, it is possible to have one, several, or no helper records per beneficiary.

### 10.3.4.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.4.3 Special Notes

When a beneficiary has more than one helper, the variable HLPRMOST identifies which helper provides the beneficiary with the most help with daily activities. This variable contains missing values for helpers who were a beneficiary's only helper. If a beneficiary with multiple helpers has not indicated which helper provides the most help, then this variable contains missing data for each of the beneficiary's helpers.

Most ADL and IADL questions are asked in the HFQ section in the fall round. However, there is one variable, HLPUSGO (the person who usually accompanies the beneficiary to their provider's office), that is asked in the winter round in the USQ section.

In 2021, the code frame at HLPREL, which stores the helper's relationship to the beneficiary, was modified to streamline and broaden relationship categories (e.g., "Child" instead of "Son").

## 10.3.5 Chronic Conditions (CHRNCOND)

### 10.3.5.1 Core Content

The Chronic Conditions segment contains information on whether the beneficiary has a series of chronic and other diagnosed medical conditions such as cancer, high blood pressure, and depression. If the respondent reports that the beneficiary has the condition, a series of follow-up questions is asked.

### 10.3.5.2 Variable Definitions

D\_OCDTYP: This variable indicates type of diabetes and is derived from OCDTYPE and DIAPRGNT. The OCDTYPE categories for "Pre-diabetes" and "Borderline" diabetes are combined into one category for D\_OCDTYP. Female beneficiaries who answer "Yes" for DIAPRGNT, which is not released, are coded as "Gestational diabetes" for D\_OCDTYP, unless they indicate for OCDTYPE that they have Type 1 diabetes.

LOSTURIN: "More than once a week" is coded if the beneficiary cannot control urination at all. Leaking urine, especially when the person laughs, strains or coughs, does not qualify as incontinence.

### 10.3.5.3 Special Notes

The HFQ and PVQ sections ask respondents whether they have ever had any of a series of illnesses or conditions in the fall round. Their responses are coded affirmatively if the beneficiary had at some time been diagnosed with the condition, even if the condition had been corrected by time or treatment. The condition must be reported by the respondent as diagnosed by a physician, not by the respondent. If the respondent is not sure about the definition of a condition, the interviewer offers no advice or information, but records the respondent's answer verbatim.

There are different versions of each illness/condition question depending on whether a respondent is in the Incoming Panel sample or Continuing sample. Incoming Panel sample respondents are asked if a doctor ever told them that they had a specific condition (e.g., hypertension). If the answer is "Yes", then the Incoming Panel respondent is asked if the doctor had told them in the past year that they had the condition.

For illnesses or conditions that cannot change after diagnosis (e.g., Alzheimer's), once an affirmative response is given, respondents are not asked again. However, if a negative response is given, respondents are asked annually thereafter if they had that specific illness or condition in the past year.

For illnesses or conditions that can change after diagnosis or can be reoccurring, such as high blood pressure, respondents are asked annually thereafter if they were diagnosed with that illness or condition in the past year, irrespective of prior responses. All data for a beneficiary from the current survey year and all previous years are used to determine whether the beneficiary has ever been told by a doctor that they had a condition. The CHRNCOND segment includes variables that indicate whether a beneficiary ever had specific conditions.

The "other specify" questions EMOS and EVROS are back coded as necessary into the "reason for Medicare eligibility" and "type of cancer" response options, respectively, but the verbatim text is not released.

In 2020, the question that asked if the beneficiary has ever had cancer was revised to exclude benign or non-malignant tumors or growths.

In 2020, the HFQ was revised to add a question asking whether the beneficiary has chronic kidney disease, regardless of diabetes status. Beginning in 2020, data on chronic kidney disease are stored in the OCKIDNY variable on the Chronic Conditions segment while data on diabetes-related kidney problems continue to be stored on the Diabetes segment.

Last available in the 2018 Survey File LDS, two items about arthritis (OCOSARTH and OCARTHOT) are available again beginning with the 2021 Survey File.

In 2016, variables asking if the beneficiary had heart valve problems or heart rhythm problems were deleted, but the corresponding responses for these two items remained in a future question asking beneficiaries which condition(s) was the cause of them becoming eligible for Medicare. In 2021, these two outdated response options were removed, EMCVALVE (eligible for Medicare because of a heart valve problem) and EMRHYTHM (eligible for Medicare because of heart rhythm problem).

### *10.3.6 Chronic Condition Flags (CHRNCDL)*

#### **10.3.6.1 Core Content**

The Chronic Conditions Flags segment contains chronic and other disabling conditions flags from administrative FFS records from the CCW. The CCW summarizes beneficiaries' FFS claims for the calendar year and indicates whether a claim for a particular condition met criteria for inclusion. This segment also provides the first year the beneficiary met the criteria for having that chronic condition. Variables are included for those conditions related to the self-reported information included in the MCBS instrument and are not inclusive of all chronic and disabling conditions available.

#### **10.3.6.2 Variable Definitions**

The end of year indicator flags require beneficiaries to satisfy both claims criteria (a minimum number/type of claims that have the proper diagnosis codes and occurred within a specified time period) and coverage criteria (FFS Part A and Part B coverage during the entire specified time period). Each flag is also created using details about the specific condition that must be met for inclusion.

Indicators have the following values:

- 0 = Beneficiary did not meet claims criteria or have sufficient FFS coverage
- 1 = Beneficiary met claims criteria but did not have sufficient FFS coverage
- 2 = Beneficiary did not meet claims criteria but had sufficient FFS coverage
- 3 = Beneficiary met claims criteria and had sufficient FFS coverage

The ever indicator variables for the conditions show the date when the beneficiary first met the criteria for the chronic or disabling condition. The variable is missing for beneficiaries that have never had the condition. The earliest possible date for anyone is January 1, 1999. If the beneficiary became eligible for Medicare after that, the earliest possible date will be some time after their coverage start date.

### 10.3.6.3 Special Notes

The end of year indicator flags criteria was developed after reviewing validated algorithms from the research literature and criteria used by other federal data sources. Please visit the CCW website for more detailed information on the criteria: <https://www.ccwdata.org/web/guest/condition-categories>.

## 10.3.7 Chronic Pain (CHRNPAIN)

### 10.3.7.1 Core Content

The Chronic Pain segment contains data on beneficiaries' experiences with chronic pain and chronic pain management techniques collected in the CPQ section administered the summer following the year of interest. The CPQ collects information related to frequency and severity of chronic pain, location of chronic pain (e.g., hips, knees, or feet), and use of pain management techniques (e.g., massage).

### 10.3.7.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.7.3 Special Notes

The CPQ uses a three-month reference period; thus, the items administered in Summer 2021 (Round 90) asked beneficiaries about pain experienced in 2021. However, because the CPQ is administered to beneficiaries who were ever enrolled in Medicare in 2021 and are still enrolled in 2022, the CPQ data are released with the 2021 Survey File.

Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the summer data collection period. This includes Survey File ever enrolled and continuously enrolled weights, as well as Cost Supplement ever enrolled weights. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

## 10.3.8 Cognitive Measures (COGNFUNC)

### 10.3.8.1 Core Content

The Cognitive Measures segment contains data on the beneficiary's cognitive abilities collected in the CMQ section administered in the fall rounds. The CMQ contains four cognitive measures, including backwards counting, date naming, object naming, and president/vice president naming.

### 10.3.8.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.



### 10.3.8.3 Special Notes

N/A

## 10.3.9 Community COVID-19 Vaccine Dosage (COMMDOSE)

### 10.3.9.1 Core Content

The Community COVID-19 Vaccine Dosage segment contains information collected in the CVQ section about COVID-19 vaccine dose(s) beneficiaries received including dose month and year, manufacturer, and where they received the dose(s) (e.g., pharmacy, hospital, etc.), collected during the Winter 2022 and Summer 2022 rounds.

### 10.3.9.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.9.3 Special Notes

There is one row for every Community beneficiary who was included in the Summer 2022 population. The variables D\_ONEDOS, D\_TWODOS, and D\_VCNUMS refer to all COVID-19 vaccine doses that the beneficiary had ever received before their Summer 2022 interview. D\_VCNUMF refers to doses received before the Fall 2021 interview, and more details on these doses can be found in the COVIDEXP segment. All other variables refer to vaccine doses administered after the beneficiary's Fall 2021 interview but before the Summer 2022 interview are included. Up to four vaccine doses are recorded.

In Winter 2022, changes were made to the existing COVID-19 items asking beneficiaries why they did not receive the COVID-19 vaccine yet. A new response indicating the beneficiary was not eligible for the next dose yet was added to the response list (NOELIG) and required a name change for all other questions collecting the responses on why the beneficiary didn't get their vaccine. All of these updated variable names are listed in Exhibit 3.5.1. The "other specify" question indicating the reason why the beneficiary is not likely to receive a vaccine (NOVACOS, formerly NOVCRNOS) was also impacted by this change. This variable is back coded as necessary into predefined response options, but the verbatim text is not released.

Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the summer data collection period. This includes Survey File ever enrolled and continuously enrolled weights, as well as Cost Supplement ever enrolled weights. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

## 10.3.10 COVID-19 Experiences (COVIDEXP)

### 10.3.10.1 Core Content

The COVID-19 Experiences segment contains information collected in the CVQ section during the fall round, and it includes data on COVID-19 vaccination, testing, diagnosis, symptoms, and prevention.

### 10.3.10.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.10.3 Special Notes

COVIDEXP replaces the 2020 Survey File segment COVIDVAC segment. The vaccine doses included in COVIDEXP are those that were reported at or before the beneficiary's Fall 2021 interview. For data on COVID-19 vaccine doses reported at the Winter 2022 and Summer 2022 Community interviews, please see the new COMMDOSE segment.

COVID-19 vaccine data are brought forward from the 2020 Survey File, but no other COVIDEXP data are combined across interview rounds. There were several additions to the COVID-19 series in CVQ in Fall 2021. These new items measure COVID-19 viral and antibody testing, preventive behaviors, medical care, severity of symptoms, and persistent health effects for those who had a probable or confirmed diagnosis of COVID-19.

### 10.3.11 Demographics (DEMO)

#### 10.3.11.1 Core Content

The Demographics segment contains demographic information collected in the survey as well as demographic information from Medicare Administrative enrollment data and constructed items of interest.

#### 10.3.11.2 Variable Definitions

ADI: The Area Deprivation Index (ADI) is an indicator of the socioeconomic deprivation of geographic areas and is intended for use in evaluating the relationship between socioeconomic factors and health. This index was originally developed using 17 markers of socioeconomic status from the 1990 Census data. The ADI dataset used in this data release was developed by Amy Kind, MD, PhD and her research team at the University of Wisconsin using the same indicators and 2020 Census block group-level data from the American Community Survey (ACS). This dataset contains national percentile rankings at the block group level from 1 to 100 as well as state decile rankings from 1 to 10. Raw ADI values are used to determine percentile and decile rankings. ADI values in the first percentile are the least disadvantaged, and those in the hundredth are the most disadvantaged.<sup>37</sup>

The MCBS includes two ADI values for each beneficiary, a national-level percentile (ADINATNL) and a state-level decile (ADISTATE). Both rankings are based on the Census block group for the beneficiary's primary residence address (CENSBLCK). Beneficiaries have a value for each of these variables if their Census block group is found on the ADI dataset. Excluding the exiting 2017 panel cases, there was a 95.7 percent match rate for cases matched to the ADI dataset.

H\_DOB, H\_DOD, H\_AGE, and D\_STRAT: These four variables are related to the beneficiary's age. The "legal" dates of birth and death from Medicare and the Social Security Administration records are recorded as H\_DOB and H\_DOD, respectively. The variable H\_AGE represents the "legal" age as of December 31, 2021, adjusted for date of death, if present. The variable D\_STRAT groups the beneficiaries by various age categories using H\_AGE. The date of birth, as reported during the Baseline interview, is recorded in DEMO (D\_DOB).

D\_DOB: When the complete date of birth is entered (D\_DOB) in the MCBS instrument, the CAPI questionnaire automatically calculates the person's age, which is then verified with the respondent. Despite this validation, the date of birth given by the respondent (D\_DOB) does not always agree with the date of birth per CMS records (H\_DOB). In these cases, the beneficiary is asked again in the next interview to provide a date of birth. Some recording errors are identified this way, but in most cases, beneficiaries provide the same date of birth both times they are asked. In some cases, proxies indicate that no one is exactly sure of the correct date

<sup>37</sup> "2020 Area Deprivation Index v3.2," University of Wisconsin School of Medicine and Public Health, <https://www.neighborhoodatlas.medicine.wisc.edu/>.



of birth. In general, it is recommended that the variable (H\_DOB) be used for analyses, since the CMS date of birth is used to select and stratify the sample.

D\_DOD: Date of death provided by proxy respondents. In general, it is recommended that both the survey-reported (D\_DOD) and administrative (H\_DOD) variables be used for analyses.

D\_RACE2: Race categories are self-reported by the respondent. Categories are not suggested by the interviewer, nor does the interviewer try to explain or define any of the groups. Ethnic groups such as Irish or Cuban are not recorded.

H\_CENSUS: The Census division is performed through internal edits by matching the survey respondent's SSA State code to the appropriate Census region. The Census divisions are as follows:

- New England – Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
- Middle Atlantic – New Jersey, New York, Pennsylvania
- South Atlantic – Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
- East North Central – Illinois, Indiana, Michigan, Ohio, Wisconsin
- West North Central – Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
- East South Central – Alabama, Kentucky, Mississippi, Tennessee
- West South Central – Arkansas, Louisiana, Oklahoma, Texas
- Mountain – Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming
- Pacific – Alaska, California, Hawaii, Oregon, Washington

Urban/rural status variables: H\_RUCA indicates overall urban/rural status. H\_RUCA1 and H\_RUCA2 indicate the primary and secondary RUCA codes, respectively (see Exhibits 10.3.11.2a and 10.3.11.2b). This classification scheme provides an alternative to county-based systems for situations where more detailed geographic analysis is feasible. It identifies areas of emerging urban influence and areas where urban-rural classifications overlap, thus providing an exhaustive system of statistical areas for the country.

The ten whole numbers shown in Exhibit 10.3.11.2a below refer to the primary, or single largest, commuting share. Metropolitan cores (code 1) are defined as Census tract equivalents of urbanized areas. Micropolitan and small town cores (codes 4 and 7, respectively) are tract equivalents of urban clusters. Tracts are included in urban cores if more than 30 percent of their population is in the urbanized area or urban cluster.

High commuting (codes 2, 5, and 8) means that the largest commuting share is at least 30 percent to a metropolitan, micropolitan, or small town core. Many micropolitan and small town cores themselves (and even a few metropolitan cores) have high enough out-commuting to other cores to be coded 2, 5, or 8; typically, these areas are not job centers themselves but serve as bedroom communities for a nearby larger city. Low commuting (codes 3, 6, and 9) refers to cases where the single largest flow is to a core but is less than 30 percent. These codes identify "influence areas" of metro, micropolitan, and small town cores, respectively, and are similar in concept to the "nonmetropolitan adjacent" codes found in other Economic Research Service (ERS) classification schemes ([Rural-Urban Continuum Codes](#), [Urban Influence Codes](#)). The last of the general classification codes (10) identifies rural tracts where the primary flow is local or to another rural tract.

**Exhibit 10.3.11.2a:** Primary RUCA (H\_RUCA1) Codes, 2010

<b>Code</b>	<b>Classification description</b>
<b>1</b>	Metropolitan area core: primary flow within an urbanized area (UA)
<b>2</b>	Metropolitan area high commuting: primary flow 30% or more to a UA
<b>3</b>	Metropolitan area low commuting: primary flow 10% to 30% to a UA
<b>4</b>	Micropolitan area core: primary flow within an urban cluster (UC) of 10,000 to 49,999 (large UC)
<b>5</b>	Micropolitan high commuting: primary flow 30% or more to a large UC
<b>6</b>	Micropolitan low commuting: primary flow 10% to 30% to a large UC
<b>7</b>	Small town core: primary flow within an urban cluster of 2,500 to 9,999 (small UC)
<b>8</b>	Small town high commuting: primary flow 30% or more to a small UC
<b>9</b>	Small town low commuting: primary flow 10% to 30% to a small UC
<b>10</b>	Rural areas: primary flow to a tract outside a UA or UC
<b>99</b>	Not coded: Census tract has zero population and no rural-urban identifier information

These ten codes offer a relatively straightforward and complete delineation of metropolitan and nonmetropolitan areas based on the size and direction of primary commuting flows. However, secondary flows may indicate other connections among rural and urban places. Thus, the primary RUCA codes are further subdivided to identify areas where classifications overlap, based on the size and direction of the secondary, or second largest, commuting flow (see Exhibit 10.3.10.2b). For example, 1.1 and 2.1 codes identify areas where the primary flow is within or to a metropolitan core, but another 30 percent or more commute to a larger metropolitan core. Similarly, 10.1, 10.2, and 10.3 identify rural tracts for which the primary commuting share is local, but more than 30 percent also commute to a nearby metropolitan, micropolitan, or small town core, respectively.

**Exhibit 10.3.11.2b:** Secondary RUCA (H\_RUCA2) Codes, 2010

Code	Classification description
<b>1 Metropolitan area core: primary flow within an urbanized area (UA)</b>	
1.0	No additional code
1.1	Secondary flow 30% to 50% to a larger UA
<b>2 Metropolitan area high commuting: primary flow 30% or more to a UA</b>	
2.0	No additional code
2.1	Secondary flow 30% to 50% to a larger UA
<b>3 Metropolitan area low commuting: primary flow 10% to 30% to a UA</b>	
3.0	No additional code
<b>4 Micropolitan area core: primary flow within an urban cluster (UC) of 10,000 to 49,999 (large UC)</b>	
4.0	No additional code
4.1	Secondary flow 30% to 50% to a UA
<b>5 Micropolitan high commuting: primary flow 30% or more to a large UC</b>	
5.0	No additional code
5.1	Secondary flow 30% to 50% to a UA
<b>6 Micropolitan low commuting: primary flow 10% to 30% to a large UC</b>	
6.0	No additional code
<b>7 Small town core: primary flow within an urban cluster of 2,500 to 9,999 (small UC)</b>	
7.0	No additional code
7.1	Secondary flow 30% to 50% to a UA
7.2	Secondary flow 30% to 50% to a large UC
<b>8 Small town high commuting: primary flow 30% or more to a small UC</b>	
8.0	No additional code
8.1	Secondary flow 30% to 50% to a UA
8.2	Secondary flow 30% to 50% to a large UC
<b>9 Small town low commuting: primary flow 10% to 30% to a small UC</b>	
9.0	No additional code
<b>10 Rural areas: primary flow to a tract outside a UA or UC</b>	
10.0	No additional code
10.1	Secondary flow 30% to 50% to a UA
10.2	Secondary flow 30% to 50% to a large UC
10.3	Secondary flow 30% to 50% to a small UC
<b>99 Not coded: Census tract has zero population and no rural-urban identifier information</b>	

**INCOME:** Income represents the best source or estimate of income during the year of interest. Data gathered in fall and summer interviews represent the most detailed data and are used when available. For individuals who did not complete the fall interview (that is, Continuing Panel people unavailable for their fall interview), the most recent information available is used. It should be noted that the variable INCOME includes income from all sources, such as pension, Social Security, and retirement benefits, for the beneficiary and spouse. In some cases, the respondent will not or cannot provide specific information but did say the income is above or below \$25,000.

INT\_TYPE: Provides the source for a beneficiary's residence status at the time of interview, and the types of interviews conducted with C = Community, F = Facility, and B = Both. INT\_TYPE is defined as:

- C = respondent only resided in the community and only completed Community-administered survey instruments in each round
- F = respondent only resided in a facility and only completed Facility-administered survey instruments in each round
- B = respondents completed instruments in both settings across the rounds

INT\_TYPE is created following the rules below:

- Beneficiaries are assigned an INT\_TYPE if they completed or partially completed an interview in at least one round in 2021. INT\_TYPE is also calculated for beneficiaries who completed an interview, but died or lost entitlement during the data year.
- Missing INT\_TYPES - There are currently 29 beneficiaries with "complete" dispositions which cannot have their INT\_TYPE/residence location calculated for them. These are individuals that appear to have died in early 2021 and did not have any completed/partially completed questionnaire data for 2021. These individuals have ever enrolled weights, but do not have completed interviews.

Note that in each data year, some differences by segment will exist (i.e., data may reflect a prior or future calendar year due to the specific questionnaire and reference period used to collect the information).

INT\_TYPE is only constructed using survey-reported data for the benefit year and is not edited to account for data collected in a future or prior data year.

INT\_TYPE is calculated on the benefit year, but data segments may reflect a prior or future calendar year due to the specific questionnaire and reference period used to collect the information. That is, the segment data is collected prior to or after the benefit year designation of INT\_TYPE.

For example, there may be beneficiaries living in facilities (INT\_TYPE = F) that appear on the 2021 segments that include 2021 non-response adjustments: ACCSSMED, CHRNPAIN, COMMDOSE, FOODINST, INCASSET, MCREPLNQ, RXMED, TELEMED, and USCARE. The MCBS would expect these segments to only include beneficiaries with INT\_TYPE = C or B because these segments contain data from survey-reported instruments only asked of beneficiaries that reside in the community. However, because the data for these segments is collected in 2022, beneficiaries may have moved from a facility in 2021 to the community in 2022 at the time these data segments were collected.

Alternatively, data may be pulled forward from a prior data collection year. For example, a beneficiary in 2020 that answered affirmative to the question, "Have you ever had a hysterectomy?", a survey item that is asked of beneficiaries in the Community Questionnaire, will have that answer pulled forward to the 2021 data segment even if the beneficiary currently resides in a facility in 2021, and thus they would show an INT\_TYPE = F. INT\_TYPE is only constructed using survey-reported data for the benefit year and is not edited to account for data collected in a future or prior data year.

IPR: Indicates the income-to-poverty ratio (IPR). The Census Bureau determines who is "poor" by comparing an individual or household's income to a set of dollar-value thresholds that are intended to represent the amount of income needed to meet basic needs and are adjusted for family size and composition. A family will be designated as "poor" or "not poor" depending on whether their income is at or below or above this set threshold in a given year. In addition, the Census Bureau provides another way to describe a person's economic well-being by gauging how close to or far from the poverty threshold a family's income rests using an IPR. IPRs, income divided by the appropriate poverty threshold, are used to normalize incomes across family types and provide context for a better understanding of the depth of poverty (or lack thereof) of a

family. The IPR is a useful analytic tool that can help MCBS users to easily identify the percentage of Medicare beneficiaries living in deep poverty, below poverty, or those in "near" poverty (usually defined as less than 125 percent of the poverty level); or how health care access and use may differ across different thresholds of interest. Note that the MCBS IPR is calculated only for household sizes of one (beneficiary living alone or in a facility) or two (beneficiary living with a spouse only) as the Income and Asset information is collected only from the beneficiary and the beneficiary's spouse. Medicare beneficiaries have slightly different poverty level indices used for program eligibility. The IPR uses the Medicare poverty thresholds for calculation but can be unformatted to create other thresholds.

PANEL: Indicates the year of the beneficiary's Baseline interview.

### 10.3.11.3 Special Notes

The Demographics segment contains all demographic data from both the survey and from CMS administrative records.

The Department of Veterans Affairs (VA) disability rating collected at SPVARATE is a percentage and is expressed in multiples of ten; it refers to disabilities that are officially recognized by the government as service-related. If the VA finds that a Veteran has multiple disabilities, the VA uses a Combined Ratings Table to calculate a combined disability rating (see <https://www.benefits.va.gov/compensation/rates-index.asp#combined>).

The data at SURVIVE contains information about beneficiaries who were continuously enrolled in Medicare from January 1 up to and including their fall round interview. The "other specify" question WHTLNGOS is back coded as necessary into the "languages spoken at home" response options, but the verbatim text is not released. Similarly, the "other specify" questions HISPDTOS, RACEASOS, and RACEPIOS are also back coded as necessary into the "Other Hispanic/Latino/Spanish", "Other Asian", and "Other Pacific Islander" response options respectively, but the verbatim text is not released.

## 10.3.12 Diabetes (DIABETES)

### 10.3.12.1 Core Content

The Diabetes segment includes survey responses related to diabetes management. Only beneficiaries living in the community who indicated that they had ever been told they have non-gestational diabetes (variable D\_OCDTYP in the Chronic Condition segment) are included in the Diabetes segment. This segment includes beneficiaries who indicated they had been diagnosed with any of these diabetic conditions: Type 1, Type 2, pre-diabetes/borderline diabetes, or other non-gestational type of diabetes.

### 10.3.12.2 Variable Definitions

Frequency of management variables: The Diabetes segment includes five pairs of items that describe the frequency of specific diabetes management behaviors. These behaviors are taking insulin, using an insulin pump, taking prescription or oral diabetes medications, testing blood glucose, and checking for foot sores. The frequency of each behavior is described by a pair of variables, with one set yielding the numeric frequency (variables D\_INSFREQ, D\_INSPMP, D\_MEDFRQ, D\_TSTFRQ, and D\_SORFRQ, respectively). The other set of variables captures the corresponding frequency unit, with the exception of D\_INSPMP (variables INSUUNIT, MEDSUNIT, TESTUNIT, and SOREUNIT, respectively).

### 10.3.12.3 Special Notes

The variables included in the Diabetes segment are centered on diabetes management. It should be noted there are other diabetes-related variables on other segments. For example, the Chronic Condition segment stores variables relevant to diabetes diagnoses (e.g., OCBETES and D\_OCDTYP). Variables related to diabetes risk and screening (e.g., DIAEVERT, DIARCNT, DIAAWARE, DIARISK, and DIASIGNS) appear in the PREVCARE segment. The variable pertaining to diabetic retinopathy (ERETINOP) appears in the VISHEAR segment.

### 10.3.13 Facility Assessments (FACASMNT)

#### 10.3.13.1 Core Content

CMS designed the MDS instrument to collect information regarding the health status and functioning of nursing home residents. The MDS is administered to anyone residing in a certified nursing home, regardless of payer. About half of MCBS beneficiaries living in a facility at the time of their interview live in certified nursing homes. For this reason, the MCBS Facility instrument has been designed to mirror the MDS instrument.

#### 10.3.13.2 Variable Definitions

D\_HYST: Beneficiary ever had a hysterectomy. This variable is set to 1 if there was ever a "yes" response to the Facility variables EVERHYST or HYSTEREC or the Community variables PAPNHYST or HYSTEREC. Otherwise, it is set to the value of most recently fielded Facility variable, EVERHYST or HYSTEREC.

D\_PNEU: Beneficiary ever had a pneumonia shot. This variable is set to 1 if there was ever a "yes" response to the Facility variable PNEUSHOT or the Community variable PNEUSHOT. Otherwise, it is set to the most recent value of Facility variable PNEUSHOT.

D\_SMOKE: Beneficiary ever smoked cigarettes, cigars, or a pipe. D\_SMOKE places emphasis on any available community responses as self-reporting by beneficiary is most likely more reliable than a response by Facility employee regarding this topic. This variable is set to:

- 1 if there was ever a "yes" response to the community variable EVERSMOKE, otherwise
- 0 if there was ever a "no" response to the community variable EVERSMOKE, otherwise
- 1 if there was ever a "yes" response to the facility variable EVRSMOKE, otherwise
- .D if there was ever a "don't know" response to the facility variable EVRSMOKE, otherwise
- The most recent value of Facility variable EVRSMOKE

#### 10.3.13.3 Special Notes

In 2021, 22 new variables were released on FACASMNT from items collecting the PHQ-9 mood assessment that were added to the HS section of the Facility Instrument in Fall 2020 as part of the beneficiary-level COVID-19 supplement (see Exhibit 10.3.13.3b).

#### Special Notes Regarding the Integration of MDS Data with FACASMNT

For beneficiaries for which the facility respondent reported a CCN, more than half of the variables in FACASMNT are skipped during data collection. The survey-reported data are later merged with MDS administrative data in data processing using the BASEID and CCN. Specifically, MDS data from the Nursing Home Comprehensive and Quarterly assessments are integrated with the FACASMNT data using the following data matching protocol:

- If there is an MDS record with an assessment date exactly matching the survey-reported assessment date, this MDS record is used.
- Otherwise, if there is an MDS assessment within 90 days of the survey-reported assessment date, the identified MDS record is used.
- If there is no survey-reported assessment date and there is an MDS assessment within 90 days of the survey reference date, this MDS record is used.
- If no MDS assessments meet these criteria, the survey record is unable to be matched to the administrative data, and the skipped variables are not populated during data processing and thus remain missing on FACASMNT.

FACASMNT data match outcomes for 2021 are detailed in Exhibit 10.3.13.3a.

#### **Exhibit 10.3.13.3a:** FACASMNT Administrative Data Match Outcomes

<b>Match Type</b>	<b>Record Count</b>
MDS record identified via an exact date match between the survey-reported assessment date and MDS assessment date	383
MDS record identified via a non-exact date match between the survey-reported assessment date and MDS assessment date	59
MDS record identified via the survey reference date	25
No match found	21

A flag variable, D\_SOURCE, indicates whether the FACASMNT record has been populated for qualifying variables using the MDS.

Since the MCBS Facility Instrument has been designed to mirror the MDS, the MDS data used is mostly comparable to the survey-reported data, but there are minor differences in the handling of item non-response and missing data. As the MDS data is administrative, values of .R (refuse to answer) and .D (don't know the answer) are not possible for these records. The MDS administrative data uses a dash, "-", to signify a missing value, while the survey-reported data use a period, ".". Values of "-" have been converted to "." in the FACASMNT segment to maintain the same convention as survey-reported data, but "-" values remain intact in the MDS3 segment.

The FACASMNT variables that may be populated during data processing using MDS data are indicated in the table below.

#### **Exhibit 10.3.13.3b:** FACASMNT Variables Populated with Administrative Data

<b>Variable Names</b>			
AFIBDYS	CSNAMFAC	MENTDOWN	PHQSYCON
ALZHMR	CTBLADDC	MENTEPIL	PHQSYDEP
ANEMIA	CTBOWELC	MENTOTHN	PHQSYINT
ANXIETY	CVATIAST	MENTOTHO	PHQSYMOMV
APHASIA	DEHYD	MENTSUM	PHQSYSES
ARTHRIT	DELUS	MOLCANE	PHQSYSYLP
ASTHCOPD	DEMENT	MOLPROS	PHQSYSYUI
BPH	DEPRESS	MOLWCHR	PHQSYTEM



**Variable Names**

BRAININJ	DIABMRN	MOLWLKR	PHQSYTIR
BSAYSOT	DVTPEPTE	NUROBLAD	PSYCOTIC
BSELFAC	GERDULC	OBURPATH	PTSD
BSELFCA	HALLUC	ORTHHYPO	PVDPAD
BSELFILL	HARTFAIL	OSTEOP	QUADPLEG
BSNOEVAL	HCHEAID	OTHFRACT	RENLESRD
BSNOTOT	HCHECOND	PARAPLEG	RESPFAIL
BSOFTWAN	HCUNCOND	PARKNSON	SCHIZOPH
BSOTHACT	HCUNDOTH	PFBATHNG	SCLEROS
BSOTHENV	HEIGHT	PFDRSSNG	SEIZEPIL
BSOTHILL	HEMIPLPA	PFEATING	SOCACITY
BSVERBOT	HIPFRACT	PFLOCOMO	SOCHEW
BSWDANGR	HUNTDIS	PFTOILET	SOCOUGH
BSWOTACT	HYPERKAL	PFTRNSFR	SODENT
CANCER	HYPETENS	PHQINTRO	SOGUMS
CATGLAUC	HYPONMIA	PHQSCORE	SOHOLD
CERPALSY	HYPRLIPI	PHQSFQAP	SOLOSS
CIRROSIS	INFHPPTS	PHQSFQCO	SOPAIN
COLCROHN	INFMDRO	PHQSFQDE	SOTEETH
COMATOSE	INFPNEU	PHQSFQIN	SOTISSUE
CORARTDS	INFSEPT	PHQSFQMO	THYROID
CSCURSEA	INFTBRC	PHQSFQSE	TOURETTE
CSDECIS	INFURNRY	PHQSFQSL	VISAPPL
CSINNH	INFWND	PHQSFQSU	VISION
CSLOCROM	MALNUTRI	PHQSFQTE	WEIGHT
CSMEMLT	MANICDEP	PHQSFQTI	
CSMEMST	MENTAUTI	PHQSYAPT	

**What is the difference between the MDS3 and FACASMNT segments?**

FACASMNT rows populated with MDS data can be linked to the corresponding MDS3 rows using the unique key BASEID, TRGT\_DT, and A2300.

See the exhibit below for key differences between the segment sources, population, reference period, and unit of observation.



**Exhibit 10.3.13.3c:** Differences between FACASMNT and MDS3 Data

<b>Data Type</b>	<b>Facility Assessment (FACASMNT)</b>	<b>Minimum Data Set (MDS3)</b>
<b>Source</b>	Blended administrative (MDS) and survey-reported (facility staff may pull information from electronic health records or systems to answer the survey questions)	Administrative (MDS)
<b>Population</b>	Represents all Facility residents, not just those in nursing homes	Represents all residents of nursing homes certified to participate in Medicare or Medicaid only
<b>Reference period</b>	Throughout the year	Could be multiple assessments during the year, time periods may differ based on what happened to each individual
<b>Unit of observation</b>	One per beneficiary	One per beneficiary per assessment

**What is the difference between FACASMNT and similar Community segments?**

Many of the variables on the FACASMNT segment are similar to variables available on the Survey File segments containing data from the Community interview. The exhibit below summarizes the topics that are available on FACASMNT that have similar content on a Community segment. However, in order to combine Community and Facility data together for analysis, some variables may need to be recoded to account for differences in response categories between Community and Facility variables. See Chapter 7 for more information about combining Community and Facility data.

For information on using flu shot data in analyses, please see PREVCARE.

**Exhibit 10.3.13.3d:** LDS Segments with Similar Topics for Community and Facility Interviews

<b>Topic</b>	<b>Segments with Community Data</b>	<b>Segments with Facility Data</b>	<b>Segments with Data for All Beneficiaries</b>
<b>Health Status</b>	GENHLTH FALLS CHRNCOND MENTHLTH OASIS	FACASMNT MDS3	
<b>Preventive Care</b>	PREVCARE	FACASMNT	
<b>Functional Status &amp; Assistance with Long-Term Care Needs</b>	ASSIST NAGIDIS OASIS MOBILITY	FACASMNT MDS3	
<b>Demographics and Socio-Economic Status</b>	INCASSET		DEMO
<b>Health Insurance Coverage</b>			HISUMRY HITLINE ADMNUTLS

### 10.3.14 Facility Characteristics (FACCHAR)

#### 10.3.14.1 Core Content

The Facility Characteristics segment is constructed using data from the Facility Questionnaire, which provides information about survey-collected facility stays, and the administrative Provider of Service (POS) file, which provides facility characteristics pertaining to SNF stays.

For a beneficiary in the current year's population file, any facility stay within a round from the current file year, as well as from the following winter round, provided that it has an admission date that falls within the current file year, is included in the file. The inclusion of these winter round records is meant to capture any stays which began after the conclusion of the fall round for a given file year. Selected data from the POS file is also included for any SNF stay occurring during the file year for beneficiaries on the finder file.

#### 10.3.14.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

#### 10.3.14.3 Special Notes

##### Special Notes regarding the Integration of CASPER Data with FACCHAR

For beneficiaries for which the facility respondent reported a CCN, 12 variables in FACCHAR are skipped during data collection. The survey-reported data are later merged with CASPER administrative data during data processing using the CCN. The values in the CCN questionnaire lookup tool are derived from CASPER, ensuring that matching administrative data will be available during data processing.

In 2021, 100 percent of FACCHAR records where a CCN was reported were matched to CASPER. A flag variable, D\_SOURCE, indicates whether the FACCHAR record has been populated for qualifying variables using CASPER.

For some variables, data from CASPER are not directly comparable to the survey-reported items. FMRBEDS, PCHBED, and HDLICBED cannot be substituted using CASPER during data processing and thus remain missing on FACCHAR.

Services provided by the facility are derived from multiple CASPER variables.

- BATHHELP: If more than one resident needs help from staff for bathing or more than one resident completely depends on staff for bathing, then the facility is classified as providing help with bathing.
- DRESHHELP: If more than one resident needs help from staff for dressing or more than one resident completely depends on staff for dressing, then the facility is classified as providing help with dressing.
- EATHELP: If more than one resident needs help from staff for eating or more than one resident completely depends on staff for eating, then the facility is classified as providing help with eating.
- NORMCARE: The facility is classified as providing nursing or medical care if more than one resident receives any of the following types of care: a catheter, radiation therapy, chemotherapy, dialysis, intravenous therapy, respiratory treatment, tracheostomy care, ostomy care, suctioning, injections, or tube feedings.
- SUPRMEDI: The facility is classified providing supervision over medications if more than one resident receives any of the following types of medications: psychoactive, antipsychotic, antianxiety, antidepressant, hypnotic, antibiotics, or pain management.

The FACCHAR variables that may be populated during data processing using CASPER data are: BATHHELP, CAIDBEDS, CANDCBED, CAREBEDS, and DRESHELP. D\_TOTBED, which captured the total bed count, is not available in 2021.

### *10.3.15 Falls (FALLS)*

#### **10.3.15.1 Core Content**

The Falls segment contains responses related to injuries and attitudes related to falls.

#### **10.3.15.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.15.3 Special Notes**

The "other specify" question FALOTHOS is back coded as necessary into the "type of injury from fall" response options, but the verbatim text is not released.

### *10.3.16 Food Insecurity (FOODINS)*

#### **10.3.16.1 Core Content**

The Food Insecurity segment contains information regarding the beneficiary's access to sufficient food. These questions are part of the IAQ and are based upon the USDA ERS Six-Item Short Form of the Food Security Survey Module found at <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools>.

#### **10.3.16.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.16.3 Special Notes**

This questionnaire is administered the summer following the year of interest. The food insecurity section for the reference year 2021 was asked in the summer of 2022. Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the summer data collection period. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

### *10.3.17 General Health (GENHLTH)*

#### **10.3.17.1 Core Content**

The General Health segment contains data regarding a beneficiary's general health status and functioning such as height and weight.

#### **10.3.17.2 Variable Definitions**

BMI\_CAT: BMI (Body Mass Index) was calculated using height and weight as-  

$$(WEIGHT*703)/((HEIGHTFT*12+HEIGHTIN)*(HEIGHTFT*12+HEIGHTIN))$$

Then categorized as:

$0 < \text{BMI} < 18.5 = 1$   
 $18.5 \leq \text{BMI} < 25 = 2$   
 $25 \leq \text{BMI} < 30 = 3$   
 $30 \leq \text{BMI} < 40 = 4$   
 $\text{BMI} \geq 40 = 5$

### 10.3.17.3 Special Notes

For height and weight information at HEIGHTFT, HEIGHTIN, and WEIGHT, the respondent is asked to recall or estimate, not to measure or weigh him or herself. In the height measurement, fractions of an inch have been rounded: those one-half inch or more were rounded up to the next whole inch, those less than one-half inch were rounded down. In the weight measurement, fractions of a pound have been rounded: those one-half pound or more were rounded up to the next whole pound, those less than one-half pound were rounded down.

Thirty variables were added to the GENHLTH segment in 2021:

- Two items about unintentional weight loss ask if the beneficiary has lost weight in the past six months without trying (LOSTWGHT) and if the beneficiary has been eating less than usual for more than a week (EATLESWK).
- Two measures of autoimmune disease prevalence were integrated into the HFQ. AUTOIMRX collects whether the beneficiary has taken prescription medication or had any medical treatment that would weaken their immune system and WEAKIMM asks whether the beneficiary currently has a health condition that weakens the immune system.
- Items about dietary supplements were added to collect if the beneficiary has used or taken any vitamins, minerals, herbals, or other dietary supplements in the past 12 months (DISUPPYR) and whether they took any multivitamins over the past 12 months (MULTVTYR). New variables store what vitamins and dietary supplements were taken in the last 12 months: calcium (VITCAL), choline (VITCHOL), coenzyme Q (VITCOEN), eye health supplements (VITEYE), fiber supplements (VITFIBER), folate (VITFOLAT), garlic supplement (VITGARLI), iron (VITIRON), joint supplements (VITJOINT), magnesium (VITMAGNE), melatonin (VITMELAT), niacin (VITNIACI), omega-3 (VITOMEGA), potassium (VITPOTAS), probiotics (VITPROBI), saw palmetto (VITSAWP), vitamin A (VITVITA), vitamin B-12 (VITVITB), vitamin B-complex (VITVITBC), vitamin C (VITVITC), vitamin D (VITVITD), vitamin E (VITVITE), zinc (VITZINC), and other supplements (VITOTHER).

## 10.3.18 Health Insurance Summary (HISUMRY)

### 10.3.18.1 Core Content

The Health Insurance Summary segment contains information on administrative plans and their characteristics. Specifically, it includes flags for monthly enrollment and dual eligibility status and information on premiums, co-pays, deductibles, and capitated payments. The file also includes EST\_TPRM, which is the sum of premiums for Parts A, B, C, and D and premiums for other plans (private coverage purchased directly from an insurance company, etc.).

There are important caveats to using premium information contained in HISUMRY. For more details, see the notes below on the H\_PDL01-12: Low-Income Subsidy Indicator values.

### 10.3.18.2 Variable Definitions

H\_DUAL01-12: The variables H\_DUAL01-H\_DUAL12 describe dual eligibility for each month based on state reporting requirements outlined in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA). These variables provide more detail regarding the type of Medicaid benefits the beneficiary is entitled to receive and are considered the most accurate source of information on enrollee status. Specific types of dual eligibility identified by these variables are as follows, where the applicable month is MM:

- **Qualified Medicare Beneficiaries without other Medicaid (QMB-only)** – These individuals are entitled to Medicare Part A, have an income of 100 percent of the Federal poverty level (FPL) or less, have resources that do not exceed twice the limit for SSI eligibility, and are not otherwise eligible for full Medicaid. Medicaid pays their Medicare Part A premiums, if any, Medicare Part B premiums, and to the extent consistent with the Medicaid State plan, Medicare deductibles, and coinsurance for Medicare services provided by Medicare providers. [Partial benefit; H\_DUALMM=01]
- **Qualified Medicare Beneficiaries plus full Medicaid (QMB-Plus)** – These individuals are entitled to Medicare Part A, have an income of 100 percent FPL or less and resources that do not exceed twice the limit for SSI eligibility, and are eligible for full Medicaid benefits. Medicaid pays their Medicare Part A premiums, if any, Medicare Part B premiums, and, to the extent consistent with the Medicaid State plan, Medicare deductibles and coinsurance, and provides full Medicaid benefits. [Full benefit; H\_DUALMM=02]
- **Specified Low-Income Medicare Beneficiaries without other Medicaid (SLMB-only)** – These individuals are entitled to Medicare Part A, have an income of greater than 100 percent FPL but less than 120 percent FPL, have resources that do not exceed twice the limit for SSI eligibility, and are not otherwise eligible for Medicaid. Medicaid pays their Medicare Part B premiums only. [Partial benefit; H\_DUALMM=03]
- **Specified Low-Income Medicare Beneficiaries plus full Medicaid (SLMB-Plus)** – These individuals are entitled to Medicare Part A, have an income of greater than 100 percent FPL but less than 120 percent FPL, have resources that do not exceed twice the limit for SSI eligibility, and are eligible for full Medicaid benefits. Medicaid pays their Medicare Part B premiums and provides full Medicaid benefits. [Full benefit; H\_DUALMM=04]
- **Qualified Disabled and Working Individuals (QDWI)** – These individuals lost their Medicare Part A benefits due to their return to work. They are eligible to purchase Medicare Part A benefits, have an income of 200 percent FPL or less, have resources that do not exceed twice the limit for SSI eligibility, and are not otherwise eligible for Medicaid. Medicaid pays the Medicare Part A premiums only. [Partial benefit; H\_DUALMM=05]
- **Qualifying Individuals (QI)** – There is an annual cap on the amount of money available, which may limit the number of individuals in the group. These individuals are entitled to Medicare Part A, have an income of at least 120 percent FPL but less than 135 percent FPL, have resources that do not exceed twice the limit for SSI eligibility, and are not otherwise eligible for Medicaid. Medicaid pays their Medicare Part B premiums only. [Partial benefit; H\_DUALMM=06]
- **Other full benefit dually eligible/Medicaid Only Dually Eligibles (Non-QMB, -SLMB, -QDWI, -QI)** – These individuals are entitled to Medicare Part A and/or Part B and are eligible for full Medicaid benefits. They are not eligible for Medicaid as a QMB, SLMB, QDWI, or QI. Medicaid provides full Medicaid benefits and pays for Medicaid services provided by Medicaid providers, but Medicaid will only pay for services also covered by Medicare if the Medicaid payment rate is higher than the amount paid by Medicare, and, within this limit, will only pay to the extent necessary to pay the beneficiary's Medicare cost sharing liability. Payment by Medicaid of Medicare Part B premiums is a state option. [Full benefit; H\_DUALMM=08]

H\_DOT: Medicare entitlement end date from the Medicare Administrative data. If the date is beyond the calendar year, it is shown as missing.

H\_EGWP01-H\_EGWP12: Prescription Drug Plan (PDP) Employer Group Waiver Plan (EGWP) Indicator: If the plan is an EGWP, then the value is 1, else the value is 2. An EGWP is not open to general enrollment but is offered through an employer group.

H\_ESREND: Ending date of ESRD period. If the date is beyond the calendar year, then it is shown as missing.

H\_GHPSW: Some MCBS beneficiaries belong to Medicare managed care plans. CMS derives variables that describe this Medicare managed care membership (H\_GHPSW and H\_MAFF01-MAFF12). The variable (H\_GHPSW) should be used only when there is an indication that the enrollee was a member of a Medicare managed care plan at some time during 2021, and this information is needed for analysis. The monthly variables (H\_MAFF01-H\_MAFF12) can be used for analyzing membership at specific points in time. The variables will indicate either "FF" (Original Medicare/Fee for Service), "MA" (Medicare Advantage/Other Medicare Capitated Payment Plans), or "NO" (No Entitlement). The H\_GHPSW variable is derived from the Health Maintenance Organization (HMO) Coverage Months variable in the administrative data. This variable indicates participation in a group health organization, also known as HMO, managed care participation, or Medicare Advantage/Medicare Part C.

H\_MAFF01-12: The MA flag variables are the most reliable indicators for monthly MA information. This information is sourced from the CMS administrative data. The H\_ENT variables were used to determine if the individual did not have Medicare entitlement. This information factored into the "No Entitlement" category in the MA flag monthly variables. The monthly entitlement variables can be found on the HITLINE segment. H\_DOE and H\_DOT on the HISUMRY file provide Medicare entitlement start and end dates for the beneficiary. Because the administrative source of this information has changed, H\_ENT variables cannot be used to crosswalk to the MA flag variables. However, H\_ENT can be used to determine Part A and Part B eligibility among FFS beneficiaries in files prior to 2015.

H\_MAPMT: Total MA A/B Payment – annual amount from Medicare Advantage Prescription Drug (MARx) data.

H\_MCSW: State buy-in is tracked by CMS and used as a general proxy for Medicaid participation. CMS derived H\_MCSW using its administrative enrollment data.

H\_OPMDCD: This variable provides a summary of annual Medicare-Medicaid dual eligibility based on the state Medicare Modernization Act (MMA) files.

Beneficiaries are assigned a dually eligible status if they are Medicaid eligible for at least one month. Specific eligibility (full, partial, or QMB) is determined by the beneficiary's status in the last month of eligibility for the year (for definitions, see option C below in Special Notes for HISUMRY for Full-benefit vs. Partial-benefit vs. QMB-only). QMB beneficiaries include Qualified Medicare Beneficiaries without other Medicaid (QMB-only). The "partial benefit" beneficiaries include: Specified Low-Income Medicare Beneficiaries without other Medicaid (SLMB-only), Qualified Disabled and Working Individuals (QDWI), and Qualifying Individuals (QI). The "full benefit" beneficiaries include: Qualified Medicare Beneficiaries plus full Medicaid (QMB-Plus), Specified Low-Income Medicare Beneficiaries (SLMB-Plus), and all other full benefit beneficiaries (Non-QMB, -SLMB, -QDWI, -QI).

Medicaid Questions: To help the respondent answer the questions about Medicaid, the interviewers use the name of the Medicaid program in the state where the beneficiary lives. A health insurance plan is one that covers any part of hospital bills, doctor bills, or surgeon bills, but does not include any of the following:

- Public plans, including Medicare and Medicaid, mentioned elsewhere in the questionnaire.
- Disability insurance which pays only on the basis of the number of days missed from work.
- Veterans' benefits.



- "Income maintenance" insurance which pays a fixed amount of money to persons both in and out of the hospital or "Extra Cash" policies. These plans pay a specified amount of cash for each day or week that a person is hospitalized, and the cash payment is not related in any way to the person's hospital or medical bills.
- Workers' Compensation.
- Any insurance plans that are specifically for contact lenses or glasses only. Any insurance plans or maintenance plans for hearing aids only.
- Army Health Plan and plans with similar names (e.g., CHAMPUS, CHAMPVA, Air Force Health Plan).
- Dread disease plans that are limited to certain illnesses or diseases such as cancer, stroke, or heart attacks.
- Policies that cover students only during the hours they are in school, such as accident plans offered in elementary or secondary schools.
- Care received through research programs such as the National Institutes of Health.

H\_PDLS01-12: Low-Income Subsidy Indicator values: When conducting data analysis with the variables H\_PDLS01-12 from the 2013 and earlier files and the 2015 and later files, you will need to recode the 2015 and later data to the previous values. See the *2018 and 2019 Data User's Guides: Survey File* for recoding guidance. The eligible categories are beneficiaries who are deemed eligible, and these beneficiaries are automatically enrolled.

H\_DDED01-12: The monthly values reflect the annual Part D deductible amount charged by the plan that the beneficiary was enrolled in that month.

H\_PRPY01-04: Primary Payer codes are summarized from the FFS claims. These codes indicate that some other payer besides Medicare covered at least some portion of the charges. Additional detail can be found under NCH\_PRMRY\_PYR\_CD, <https://www2.ccwdata.org/documents/10280/19022436/codebook-ffs-claims.pdf>

H\_PTAPRM: Total Part A Premium paid in calendar year (CY) – This is for beneficiaries who purchased Part A by paying a monthly premium. Note that this variable will have a relatively small number of beneficiaries.

H\_PTBPRM: Total Part B Premium paid in CY – This includes all Part B beneficiaries (a large number; a premium is always paid by either the beneficiary or a third party). NOTE: The MCBS shows no Part B premium paid if the beneficiary belongs to a managed care plan in which the plan pays the entirety of the premium. In this scenario, the plan paid the entirety of the beneficiary's premium, so the process shows no premium paid.

H\_PTDAMT: PTD Total Payment – annual amount from the MARx data.

EST\_TPRM: This variable is the sum of all premiums reported prorated by the number of months of coverage for each plan. The variable name emphasizes that the total is an estimate since complete information on the amount that a beneficiary paid may not be available for all plans. For example, for Part A, B, C, and D plans, the premium reflects the total paid, either by the beneficiary or a third party on their behalf.

### Payment Model Participation Flags

There are three variables that indicate the payment model for each plan.

H\_PRGID: CMS Prog ID – Payment Model

H\_PRGID2: 2nd CMS Prog ID – Payment Model

H\_PRGID3: 3rd CMS Prog ID – Payment Model

H\_PRGID2 and H\_PRGID3 are only populated if the beneficiary has multiple program IDs. Variables are designated as single, 2<sup>nd</sup>, or 3<sup>rd</sup> based on the start/end dates of the entries in the source data (earliest start date, next=2, etc.). Start dates are prior to 12/31/YR and end dates may be after 1/1/YR where "YR" = data year.

### 10.3.18.3 Special Notes

When describing dually eligible enrollees, users typically define and present analyses separately for two subgroups: full-benefit and partial-benefit. However, some users may wish to pull the QMB-only beneficiaries out of the partial-benefit group to create a third classification. Therefore, the H\_DUAL01-H\_DUAL12 variables may be used to group Medicare-Medicaid enrollees into one, two or three categories, as follows:

A. No delineation:

All Medicare-Medicaid (dually eligible) enrollees: H\_DUAL01-H\_DUAL12 in (01, 02, 03, 04, 05, 06, 08)

B. Full-benefit vs. Partial-benefit:

Partial-benefit: H\_DUAL01-H\_DUAL12 in (01, 03, 05, 06)

Full-benefit: H\_DUAL01-H\_DUAL12 in (02, 04, 08)

C. Full-benefit vs. Partial-benefit vs. QMB-only:

QMB-only: H\_DUAL01-H\_DUAL12 =01

Partial-benefit (non-QMB): H\_DUAL01-H\_DUAL12 in (03, 05, 06)

Full-benefit: H\_DUAL01-H\_DUAL12 in (02, 04, 08)

For detailed information on how the HITLINE and HISUMRY segments differ from the previously released RICs (i.e., RICs 4 and A), see the *2018 and 2019 Data User's Guides: Survey File*.

## 10.3.19 Health Insurance Timeline (HITLINE)

### 10.3.19.1 Core Content

The Health Insurance Timeline segment contains one record for each plan a beneficiary has and includes information on type of insurance coverage, monthly eligibility/enrollment, coverage start and end dates, and the source information for the coverage. For all plans that a beneficiary has, both administrative and survey reported are included on the file. However, starting with 2021, survey reports of Medicare Advantage (MA) enrollment with no corresponding record of MA enrollment in administrative data have been excluded. In addition, HITLINE contains detailed information on plans for which no administrative data are available. These plans are reported in the survey only and include different types of private plans, Tricare, coverage for certain medical events through the Department of Veteran's Affairs for beneficiaries living in a facility, and public plans that do not fall under either Medicare or Medicaid. For these survey-only plans, the file includes flags indicating types of services covered, and, for private plans, information on plan policyholder and premiums paid. All plans reported in a Community setting also have a unique plan identifier, PLANNUM, which can be used to link plans across multiple years.

The questionnaire does not ask whether a given plan offers 'comprehensive' coverage. Data users can construct their own definition of comprehensive coverage and consult individual coverage flags to determine if a plan meets their criteria for being a comprehensive plan.



### 10.3.19.2 Variable Definitions

**SRCCOV01-12:** Indicates the source of coverage information for the plan for a given month in the calendar year: CMS Administrative Data, Survey Data, or Both Administrative and Survey Data.

**COV01-12:** Indicates if the beneficiary was covered by this plan for a given month in the calendar year.

**S\_DVH:** Indicates whether plan covers dental, vision, or hearing services.

**S\_OTHPLN:** Indicates whether plan is a specialty plan that only covers specific services (such as long-term care, coverage for cancer/dread disease, etc.).

**S\_HMOPPO:** Indicates whether beneficiary's private plan is an HMO/PPO. Obtained from the HIQ variable PPRVHMO.

**S\_PHREL:** The relationship of the policyholder to the beneficiary. Responses from the HIQ variable PERS\_MIPNUM are combined with beneficiary's household roster information to determine the policyholder's relationship to the beneficiary.

**S\_OBTNP:** Indicates how the main insured person obtained their private policy (e.g., self-purchased, current or former employer, etc.). Obtained from the HIQ variable PPRVGET.

**S\_COVNM:** The number of people covered by each private plan. Obtained from the HIQ variable PRVNMCOV.

**D\_COVRX:** Indicates if beneficiary's plan covers prescription drugs.

**S\_MSCOV:** Indicates if beneficiary's plan covers visits to a doctor or other professional or lab work. Obtained from the HIQ variable PRVMSCOV.

**S\_IP:** Indicates whether beneficiary's private plan covers inpatient stays. Obtained from the HIQ variable PRVIPCOV.

**S\_COVNH:** Indicates whether beneficiary's private plan has long-term care coverage. Obtained from the HIQ variable PRVNHCOV.

**S\_DNTAL:** Indicates whether beneficiary's private plan covers dental services. Obtained from the HIQ variable MHMODENT.

**S\_VISN:** Indicates whether beneficiary's private plan covers optical or vision coverage. First added in Fall 2020 (Round 88), this information is obtained from the HIQ variable PRVOPEYE.

**S\_PAYSP:** Indicates whether the main insured person (MIP) pays any part of the insurance premium. Obtained from the HIQ variable MIPPINS.

**S\_PREM:** Reported cost of private health insurance plan premiums. A premium amount was recorded even if the respondent did not directly pay the premium (for example, if a son or daughter paid the premium). This variable was derived from the HIQ variable MIPPAMT. For family plans, the reported amount reflects the total premium paid for the plan.

**D\_ANNPRM:** The annual reported cost of private health insurance plan premiums calculated for beneficiaries who answered questions associated with both S\_PAYUNIT and S\_PREM. Premium amounts have been prorated based on how long the beneficiary held the policy. For family plans, the annualized amount reflects the total premium paid for the plan.

S\_PAYUNT: Specifies how frequently (once per year, once per month, etc.) the amount reported in S\_PAYSP was paid. Obtained from the HIQ variable MIPPUNIT.

S\_PAYOTH: Indicates whether anyone else, such as an employer or a union, helped to pay any portion of the premium. Obtained from the HIQ variable MHMOCOST.

S\_PAYWHO: Indicates who paid a portion of the total cost of the premium. Obtained from the HIQ variable MHMOWHO.

S\_TRIRX: Specifies where Tricare members obtain prescription drugs. Obtained from the HIQ variable TRIMEDS.

D\_FCLTYF: Indicates whether a plan was reported in a Facility setting. Facility interviews are not conducted with the beneficiary but rather with facility staff who may have little information on coverage type and plan details. D\_FCLTYF indicates which plans were reported in a Facility setting and thus have limited detailed information about them available. Beneficiaries who transition between community and facility settings may have a plan reported in each setting. However, due to the nature of the Facility interview, it is not possible to ascertain whether these would reference the same plan.

### 10.3.19.3 Special Notes

The HITLINE segment has one record for every plan reported for a beneficiary. Individuals covered for the entire year by a plan will have a BEGDATE of 010120XX and an ENDDATE of 123120XX to indicate a full year's coverage. BEGDATE is set for all plans using the month when a plan was first reported. For example, if someone had coverage January – March and June – November, BEGDATE will reflect that coverage started in January. Most plans have an ENDDATE as well. The only plans with missing ENDDATE are plans where coverage ended and then started again. For plans where survey and administrative data are combined, BEGDATE and ENDDATE are set using all available coverage information. Data users can reference SRCCOV01-SRCCOV12 flags to identify whether coverage information for a given month came from administrative records, a survey report, or both.

Eligibility for Tricare can be lost. Due to this fact, data users should pay attention to the appropriate coverage indicators (i.e., PLANTYPE, COV01-COV12).

## 10.3.20 Household Characteristics (HHCHAR)

### 10.3.20.1 Core Content

The Household Characteristics segment includes beneficiaries who resided in a community setting as of their last complete interview and contains information about the beneficiary's household composition and residence. For each calendar year, this segment reflects the latest available data on the size of the household and the age and relationship of household members. Information about the beneficiary's physical residence is collected at the Baseline interview and updated as necessary.

### 10.3.20.2 Variable Definitions

D\_HHTOT: Reflects the total number of people living in the household.

D\_HHREL and D\_HHUNRL: Indicate the number of people in the household related to the beneficiary and unrelated to the beneficiary, respectively.

D\_COMPHH: Reflects the composition of the household members.

D\_SEXSPP: Indicates the gender when a spouse or partner is identified in D\_COMPHH as a member of the household.

D\_HHLT50 and D\_HHGE50: Indicate the number of people in the household under the age of 50 and those 50 years of age or above, respectively. These numbers may include the beneficiary.

D\_HHLT18: Indicates the number of people under the age of 18 who are related to the beneficiary.

### 10.3.20.3 Special Notes

CMS defines a household as a group of individuals, either related or not, who live together and share one kitchen. This may be one person living alone, a head of household and relatives only, or a head of household living with relatives, boarders, and any other unrelated individual living under the same roof, sharing the same kitchen.

Household membership includes all persons who currently live at the household or who normally live there but are away temporarily. For example, unmarried students away at school or family members away receiving medical care are included. Visitors in the household who will be returning to a different home at the end of the visit are not included. Generally, if there is any question about the composition of the household, the respondent's response is accepted.

Because the date of birth or exact relationship of a household member is sometimes unknown (perhaps because a proxy provided the information), the sum of the variables "number related"/"number not related" (D\_HHREL/D\_HHUNRL) or "number under 50"/"number 50 or older" (D\_HHLT50/D\_HHGE50) may not equal the total number of people in the household (D\_HHTOT).

Data on certain characteristics of the residence (e.g., number of levels) is collected during the Baseline interview and carried forward unless a beneficiary moved or had a Facility stay prior to returning to the Community. Information about other characteristics of the residence (e.g., availability of personal care services) is updated annually during the fall interview.

Only beneficiaries living in the community who are responding to a Continuing interview are in universe for the question SPMOVED, "Has the SP moved since the last Fall Round data collection date?". For this reason, data users are encouraged to use longitudinal weights if they wish to utilize this variable in analysis. The reference period for this variable is going to be longer for beneficiaries whose last fall interview was in a facility and beneficiaries who missed the last fall interview.

The "other specify" questions DWELLOS and HCOMUNOS are back coded as necessary into the "description of beneficiary's housing" response options, but the verbatim text is not released.

The questionnaire was also modified to only collect full date of birth for the beneficiary and their spouse or partner. Therefore, logic was added at variable EHHDOBDD to hide the "day" field if the household member is anyone other than the beneficiary's partner or spouse.

Ten variables were added to the HHCHAR segment in 2021. These new variables were LIVNGSIT, which asks the beneficiary to select which best describes their living situation today, and eight follow-up items which collect problems with the respondent's residence such as pests (HOUSPEST), mold (HOUSMOLD), lead paint or pipe (HOUSLEAD), lack of heat (HOUSHEAT), lack of cooling system (HOUSCOOL), oven or stove not working (HOUSOVEN), smoke detectors missing or not working (HOUSMOK), and water leaks (HOUSWATR). Also in 2021, the variable HHJBSTAT, which collected job status for everyone in the household, was renamed SPOUSJOB, as the universe of respondents changed from everyone in the household to just the beneficiary's spouse or partner.

### *10.3.21 Income and Assets (INCASSET)*

#### **10.3.21.1 Core Content**

This segment contains data on a beneficiary's reported income and assets.

#### **10.3.21.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.21.3 Special Notes**

In the IAQ, the reference period for income is generally the previous calendar year. That is, many income questions are asked in the summer of 2022 about income earned in 2021.

Example: "Now I want to ask about your [and spouse's] total income for last year, that is, for the calendar year ending in December [CURRENT YEAR - 1], before any federal or state taxes were taken out."

Other items ask about income earned in the current calendar year.

Example: "You told me earlier that you have job-related pension plans. In all, how much was received from these pension plans in the last month, before any federal or state taxes were taken out (for the month of [CURRENT MONTH - 1])?"

For assets, there are three different timeframes referenced in the IAQ:

1. How much of an asset was received or withdrawn in the last month.
  - a. Example: "Is your mortgage paid off or are monthly mortgage payments still being made?"
2. How much is currently in certain accounts.
  - a. Example: "This next question is a bit different. You mentioned that you have retirement accounts. In total, about how much is currently in all of these retirement accounts?"
3. How much altogether was received or withdrawn in the last year.
  - a. Example: "Now thinking about all of last year, that is calendar year [CURRENT YEAR - 1], how much altogether did you receive or withdraw from all of these retirement accounts?"

The difference in reference periods between income and assets items is due to the nature of the information collected (i.e., respondent recall is facilitated when asking about a bank account balance from the last month versus four months ago), and many assets are relatively stable in value (e.g., housing).

Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the summer data collection period. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

The MCBS imputes income when income data are missing. Data are first imputed whether or not an income source (such as Social Security) exists. If the income source exists, then the amount earned is imputed next. Imputation is performed using the hot deck imputation method, and a flag is created for each imputed variable indicating whether or not the corresponding value is imputed.

The "other specify" questions LUMPSUMO and OPYSCHED are back coded as necessary into the "form of lump payment" and "other payment schedule" response options, respectively, but the verbatim text is not released.

The INCASSET segment underwent notable changes in 2021 to improve its analytic usability for researchers. Specifically, compared to prior years' segments, 15 variables were updated, and 35 redundant variables were removed from the 2021 segment. Additional details about these updates to the INCASSET segment can be found in the 2021 INCASSET Data Note, which is available in the zip file with this *Survey File Data User Guide* at <https://www.cms.gov/research-statistics-data-and-systems/research/mcbs/codebooks>.

In 2021, the question text and code list at variable `IAQ6-PENSION_LASTMONTH` were updated to make it more explicit that the beneficiary should only answer in the affirmative if they have a pension plan and currently receive income from it.

### *10.3.22 Interview Characteristics (INTERV)*

#### **10.3.22.1 Core Content**

The Interview Characteristics segment summarizes interview characteristics, such as the type of interview and whether a proxy is used.

#### **10.3.22.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.22.3 Special Notes**

Some beneficiaries have more than one interview in a round if they have moved from a community to facility setting within the reference period, or vice versa. To avoid duplication of data, the information in this file represents the last interview conducted with the respondent in each given round. `INTERVU` indicates which type of interview (Community or Facility) was conducted.

`TOTLINTV` indicates the total number of interviews conducted with the beneficiary in the year.

In 2021, the variable `MINTOTAL`, which collected the length of interview in minutes, was renamed `INTDUR`. This variable excludes any time that elapses for setting up the interview. Interview length may be missing in certain circumstances, such as an interruption in the interview to accommodate the respondent's schedule.

Also in 2021, the code frame at `ROSTREL`, which stores the proxy respondent's relationship to the beneficiary, was modified to streamline and broaden relationship categories (e.g., "Child" instead of "Son").

### *10.3.23 Medicare Advantage Plan Questions (MAPLANQX)*

#### **10.3.23.1 Core Content**

The MA Plan Questions segment augments information from the ACQ and SCQ sections of the questionnaire for those beneficiaries enrolled in Medicare Part C. Beneficiaries who are enrolled in an MA plan at the time of the interview are asked general questions about their health plans, which include access to and satisfaction with medical services. This segment also contains the beneficiary's assessment of the quality of the medical care that they are receiving, types of additional coverage offered, and any beneficiary-paid premiums associated with the health plan.

### 10.3.23.2 Variable Definitions

D\_ANHMO: The annual additional cost of MA premiums. The premiums are annualized regardless of the length of time the respondent actively held the policy. This variable is derived from the HIQ items MHMOAMT and MHMOUNIT.

D\_MADV: This variable is derived from administrative data and set to 1 if the beneficiary was covered by an MA plan for at least one month out of the calendar year. All beneficiaries included in the MA Plan Questions segment have D\_MADV set to 1.

MADVYRS: The number of years the beneficiary has been enrolled in MA. This variable is derived from the HIQ item HMONUMYR.

RECMADV: Indicates whether the respondent recommends the MA plan to family/friends. This variable is derived from the HIQ item RECMHMO.

MA coverage variables (MADV DENT, MADV NH, MADV EYE, and MADV RX): Indicate whether the beneficiary's MA plan covers dental care, vision care, nursing home care, and prescription medicines. These variables are derived from the HIQ items MHMODENT, MHMONH, MHMOEYE, and MHMORX.

MA payment variables (MADV PAY, MADV COST, and MADV WHO): Indicate whether there is an additional cost associated with the MA plan and if so, who covers the cost. These variables are derived from the HIQ items MHMOPAY, MHMOCOST, and MHMOWHO.

### 10.3.23.3 Special Notes

If the respondent reports a payer or a unit of payment that is not included in the predefined code list, the interviewer documents their response verbatim in an "other specify" variable that is not released. The "other specify" response is back coded as necessary into the predefined code list.

## 10.3.24 Medicare Plan Beneficiary Knowledge (MCREPLNQ)

### 10.3.24.1 Core Content

The Medicare Plan Beneficiary Knowledge segment contains information from the KNQ section related to the beneficiary's knowledge about the Medicare open enrollment period and Medicare-covered expenses. The KNQ is administered the winter following the year of interest.

The data collected in this segment support evaluation of the impact of existing education initiatives by CMS. The KNQ section helps refine future CMS education initiatives by asking about information that beneficiaries may need, preferred sources for this information, and beneficiaries' access to insurance information. This data also presents the knowledge beneficiaries have gained from CMS publications.

### 10.3.24.2 Variable Definitions

KVSTSITE: This variable collects whether the respondent has ever visited the official website for Medicare information. If the respondent has previously answered "yes" to this question, the "yes" response is pulled forward to the current data year.

KCPHINFO: This variable collects whether the respondent has ever called 1-800-MEDICARE. If the respondent has previously answered "yes" to this question, the "yes" response is pulled forward to the current data year.

### 10.3.24.3 Special Notes

In 2021, the variable KNHAVCOM was replaced with a series of variables asking about beneficiary's use of different computers. Variables COMPDESK (use of desktop or laptop), COMPPHON (use of smartphone), and COMPTAB (use of tablet) were added with this update. The variable AUDIOVID was also added, asking whether beneficiaries have participated in video or voice calls over the internet.

Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the winter data collection period. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

## 10.3.25 Minimum Data Set (MDS3)

### 10.3.25.1 Core Content

The Minimum Data Set is health assessment information collected while the beneficiary was in an approved Medicare Facility. For more information regarding the MDS and the changes in version 3.0, please consult <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/index>.

### 10.3.25.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.25.3 Special Notes

MDS3 administrative data records are included for any beneficiary having such a record in the year of interest. There are beneficiaries living in the community (DEMO segment INT\_TYPE = C) that appear in the MDS segment. CMS includes MDS data for all MCBS beneficiaries regardless of the INT\_TYPE, which is determined by the type of survey instrument completed.

For more information on the difference between the MDS and FACASMNT data and how the two segments can be linked, please see the FACASMNT section above.

## 10.3.26 Mental Health (MENTHLTH)

### 10.3.26.1 Core Content

The Mental Health segment contains survey responses regarding the beneficiary's mental health such as feelings of anxiety or depression.

### 10.3.26.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.26.3 Special Notes

Generalized Anxiety Disorder scale (GAD-2): Two items labeled with "GAD" comprise the GAD-2 scale, which is a screening tool for generalized anxiety.



Patient Health Questionnaire (PHQ-9): Items labeled with "PHQ" are taken from the PHQ-9, which is a screening tool for depression. The MCBS does not collect the ninth item on the PHQ-9, which asks about suicidal ideation, but does include the PHQ-9 follow-up question that asks about the overall difficulty caused by depression (MENTHLTH item PHQPRDIF).

In 2021, SOCISOLA was added to the HFQ, collecting how often the beneficiary has felt lonely or isolated from those around them.

### *10.3.27 Mobility (MOBILITY)*

#### **10.3.27.1 Core Content**

The Mobility segment contains information on the beneficiary's use of available transportation options and whether the beneficiary's health affects their daily travel.

#### **10.3.27.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.27.3 Special Notes**

N/A

### *10.3.28 Multiple Year Enrollment (MYENROLL)*

#### **10.3.28.1 Core Content**

The Multiple Year Enrollment segment combines five years of enrollment information for the current year MCBS beneficiary population. This allows users to view multiple years of enrollment information in one file.

#### **10.3.28.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.28.3 Special Notes**

N/A

### *10.3.29 Nagi Disability (NAGIDIS)*

#### **10.3.29.1 Core Content**

The Nagi Disability segment contains information on the beneficiary's difficulties with performing ADLs and IADLs, including which ADLs and IADLs the beneficiary has difficulty performing, how long the beneficiary has experienced these difficulties, whether the beneficiary has received any help or used supportive equipment to perform ADLs or IADLs, and the total number of persons who have helped the beneficiary, if applicable.

#### **10.3.29.2 Variable Definitions**

ADL and IADL measures: The MCBS asks respondents whether they have any difficulty performing 12 activities. Their answers about difficulty performing the IADLs (PRBTELE, PRBLHWK, PRBHWWK, PRBMEAL, PRBSHOP, and PRBBILS) and ADLs (HPPDBATH, HPPDDRES, HPPDEAT, HPPDCHAR, HPPDWALK, and

HPPDTHIL) reflect whether or not the beneficiary usually has difficulty and anticipates continued trouble with these tasks, even if a short-term injury made them temporarily difficult.

"Difficulty" in these questions has a qualified meaning. Only difficulties associated with a health or physical problem are considered. If a beneficiary only performed an activity with help from another person (including just needing to have the other person present while performing the activity), then that respondent is deemed to have difficulty with the activity.

Help from another person includes a range of helping behaviors. The concept encompasses personal assistance in physically doing the activity, instruction, supervision, and "standby" help. These questions are asked in the present tense; the difficulty may have been temporary or may be chronic. Vague or ambiguous answers, such as "Sometimes I have difficulty," are coded "yes."

D\_ADHNM: D\_ADHNM stores the number of persons helping the beneficiary with ADLs and/or IADLs. D\_ADHNM is derived by counting the number of helper rows for a BASEID.

D\_MODTIM: The length of time the beneficiary spent doing moderate activities (e.g., golf, gardening) is collected in number of minutes/day, hours/day, hours/week, or hours/month. The length of time is stored in a continuous variable while the corresponding unit is stored in a categorical variable. These variables are used to derive D\_MODTIM, the number of hours per week the beneficiary spent doing moderate activities.

D\_MUSTIM: The length of time the beneficiary spent increasing muscle strength (e.g., lifting weights, yoga) is collected in number of minutes/day, hours/day, hours/week, or hours/month. The length of time is stored in a continuous variable while the corresponding unit is stored in a categorical variable. These variables are used to derive D\_MUSTIM, the number of hours per week the beneficiary spent increasing muscle strength.

D\_VIGTIM: The length of time the beneficiary spent doing vigorous activities (e.g., running, aerobics) is collected in number of minutes/day, hours/day, hours/week, or hours/month. The length of time is stored in a continuous variable while the corresponding unit is stored in a categorical variable. These variables are used to derive D\_VIGTIM, the number of hours per week the beneficiary spent doing vigorous activities.

HPPDBATH: Those who have difficulty bathing or showering without help met at least one of the following criteria:

- someone else washes at least one part of the body
- someone else helps the person get in or out of the tub or shower or helps get water for a sponge bath
- someone else gives verbal instruction, supervision, or stand-by help
- the person uses special equipment such as handrails or a seat in the shower stall
- the person never bathes at all (a highly unlikely possibility)
- the person receives no help, uses no special equipment or aids, but acknowledges having difficulty

HPPDDRES: Dressing is the overall complex behavior of getting clothes from closets and drawers and then putting the clothes on. Tying shoelaces and putting on socks or hose are not considered part of dressing. Special dressing equipment includes items such as button hooks, zipper pulls, long-handled shoe horns, tools for reaching, and any clothing made especially for accommodating a person's limitations in dressing, such as Velcro fasteners or snaps.

HPPDEAT: A person eats without help if he or she can get food from the plate into the mouth. A person who does not ingest food by mouth (that is, is fed by tube or intravenously) is not considered to eat at all. Special

eating equipment includes such items as a special spoon that guides food into the mouth, a forked knife, a plate guard, or a hand splint.

**PRBBILS:** Managing money refers to the overall complex process of paying bills, handling simple cash transactions, and generally keeping track of money coming in and money going out. It does not include managing investments, preparing tax forms, or handling other financial activities for which members of the general population often seek professional advice.

**PRBLHWK and PRBHHWK:** The distinction between light housework (PRBLHWK) and heavy housework (PRBHHWK) is made clear by examples. Washing dishes, straightening up and light cleaning represent light housework; scrubbing floors and washing windows represent heavy housework. The interviewer is not permitted to interpret the answer in light of the degree of cleanliness of the dwelling.

**PRBMEAL:** "Preparing meals" includes the overall complex behavior of cutting up, mixing, and cooking food. The amount of food prepared is not relevant, so long as it would be sufficient to sustain a person over time. Reheating food prepared by someone else does not qualify as "preparing meals."

**PRBSHOP:** Shopping for personal items means going to the store, selecting the items, and getting them home. Having someone accompany the beneficiary would qualify as help from another person.

**PRBTELE:** Using the telephone includes the overall complex behavior of obtaining a phone number, dialing the number, talking and listening, and answering the telephone.

### 10.3.29.3 Special Notes

Six global disability questions are released on the Nagi Disability segment to comply with HHS guidance. These variables are: DISDECSN, DISWALK, DISBATH, and DISERRND. DISHEAR and DISSEE are included on the VISHEAR segment.

A new question DISTEETH which asks if the beneficiary lost all their upper and lower natural permanent teeth was added to the HFQ section in 2020.

For beneficiaries with identified helpers, information about the persons responsible for assisting with the beneficiary's performance of ADLs and IADLs is found in the ASSIST segment.

## 10.3.30 Nicotine and Alcohol (NICOALCO)

### 10.3.30.1 Core Content

The Nicotine and Alcohol segment contains information on the prevalence and frequency of alcohol and nicotine use (including cigarettes, e-cigarettes, cigars, pipe tobacco, and smokeless tobacco).

### 10.3.30.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.30.3 Special Notes

Affirmative responses indicating former or current use of inhaled tobacco products (cigar, cigarette, smokeless tobacco, pipe tobacco, and e-cigarettes) are pulled forward to the current data year variables (i.e., CIGARONE, CIGAR50, CIG100, SMKLSONE, PIPEONE, and ECIGONE).

### *10.3.31 Outcome and Assessment Information (OASIS)*

#### **10.3.31.1 Core Content**

The Outcome and Assessment Information segment contains assessment information conducted while the beneficiary was receiving home health services.

For more information regarding OASIS, please consult <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits>.

#### **10.3.31.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.31.3 Special Notes**

All home health records are included for MCBS respondents for the year of interest.

### *10.3.32 Patient Activation (PNTACT)*

#### **10.3.32.1 Core Content**

The Patient Activation segment contains data that can be used to assess the degree to which beneficiaries actively participate in their own health care and the decisions concerning their health care, measuring if beneficiaries receive information about their health and Medicare and if they understand the information in a way that makes it useful.

#### **10.3.32.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.32.3 Special Notes**

Special non-response adjustment weights are included in the file to account for survey non-response as these items are only asked of non-proxy respondents.

### *10.3.33 Preventive Care (PREVCARE)*

#### **10.3.33.1 Core Content**

The Preventive Care segment provides data on the beneficiary's use of preventive services, including getting a mammogram, Pap smear, prostate screening, diabetes screening, colon cancer screening, blood pressure screening, flu and pneumonia shots, shingles vaccine, and HIV testing.

#### **10.3.33.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.33.3 Special Notes**

Select items are collected only in the summer (whether the beneficiary received a pneumonia shot or the shingles vaccine) while the seasonal flu vaccine items are asked in the winter and summer rounds. Several

items are collected only in the fall, including questions about getting a mammogram, Pap smear, prostate test, blood pressure screening, hysterectomy, and HIV testing.

**How do I find out what proportion of Medicare beneficiaries received a flu shot in a given calendar year?** Flu shot data are available for both Community and Facility components, but data collection and processing methods are different, and the variables are located on different segments in the Survey File LDS. To estimate prevalence of flu shots in a given flu season, data users need the prior data year (e.g., 2020) Survey File for beneficiaries living in the community and the current data year (e.g., 2021) Survey File for beneficiaries living in a facility. Note that the response categories of the FLUSHOT variables are similar across the two components (Yes/No), but the coding values associated with the Yes/No categories in the LDS files are different. For community, Yes = 1 and No = 2, but for facility Yes = 1 and No = 0. In addition, the reference periods differ between the Community and Facility components. Therefore, users need both the prior and current data year Survey File LDS' to estimate the flu shot prevalence for all Medicare beneficiaries for a given flu season.

**Exhibit 10.3.33.1:** Segment, Questionnaire, and Variable Information for Analyses of 2020-2021 Flu Shot Data

Component	Variable Location	Variable Label	Data Collection Timing
Community	FLUSHOT ON PREVCARE	FLU SHOT FOR LAST WINTER	PVQ in Winter and Summer 2021 and included in 2020 Survey File
Facility	FLUSHOT on FACASMNT	SP HAD A FLU SHOT IN THE PAST YEAR?	HS in Fall 2021 and included in 2021 Survey File

The "other specify" questions MAMNOTHS, PAPNOTHS, PRONOTHS, FLUOTHOS, and FLUSITOS are back coded as necessary into the reason(s) for not getting a mammogram, Pap smear, prostate test, or flu shot or where they got their flu shot, respectively, but the verbatim text is not released.

### 10.3.34 Residence Timeline (RESTMLN)

#### 10.3.34.1 Core Content

The Residence Timeline segment provides a timeline of each MCBS setting type in which a beneficiary resides over the portion of the year in which they are enrolled in Medicare, as well as any periods associated with FFS inpatient, SNF, or hospice events.

#### 10.3.34.2 Variable Definitions

D\_BEG1: Represents the beneficiary's first date of Medicare eligibility within the file year.

D\_CODE1: Either identifies a residential setting or for a small number of cases, contains the code "N". The latter only occurs for some Facility respondents who are new to the MCBS survey but were enrolled in Medicare prior to the start of the year. The first interview that these beneficiaries receive only covers back to the date of admission into the facility in which they currently reside. If they were admitted into their current facility after the 1<sup>st</sup> of the year, it will result in the setting code on their first situation (D\_CODE1) having a value of "N".

### 10.3.34.3 Special Notes

Residential situations are overwritten by all claim events which overlap them, with two exceptions. Hospice events do not overwrite residential situations as this type of utilization is less indicative of a change in setting as it is a change in the level of care being received. These events should instead be considered as occurring concurrently with the beneficiary's identified residential situation. Also, a beneficiary's initial residential status is not overwritten, even when overlapped completely by a claim of any type, in order to provide context as to their original living situation at the start of their timeline.

The total number of setting changes is equal to the sum of MCBS residential status changes (D\_NUMRES) and the number of the events corresponding to the above mentioned claim types (D\_NUMEVT). Each transition is identified with a code representing the type of setting along with begin and end dates.

The number of variables in the series D\_CODEn, D\_BEGn, and D\_ENDn will correspond to the maximum number of settings in a given year (calculated as D\_NUMSIT + D\_NUMEVT). At a minimum, each beneficiary has information pertaining to their setting at the beginning of their eligibility period within the year. Residential status situations do not have end dates populated to illustrate that these extend through any claim events which follow until a change in residential status occurs.

### *10.3.35 RX Medications (RXMED)*

#### 10.3.35.1 Core Content

The RX Medications segment augments information from the ACQ and SCQ sections of the questionnaire with information specific to prescription drug coverage collected in the RXQ section. The RXQ covers topics related to knowledge about and experience with Medicare Part D enrollment, options considered when choosing prescription drug coverage, access to prescription drugs, and satisfaction with current prescription drug coverage.

#### 10.3.35.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

#### 10.3.35.3 Special Notes

This questionnaire is administered the summer following the year of interest. The RXQ questions for the reference year 2021 were asked in the summer of 2022. Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the summer data collection period. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

The "other specify" questions PDNOOS and PDNTOS are back coded as necessary into the reason(s) for not using the current coverage response options and the reason(s) for not being enrolled response options, respectively, but the verbatim text is not released.

### *10.3.36 Satisfaction with Care (SATWCARE)*

#### 10.3.36.1 Core Content

The Satisfaction with Care segment contains data from the SCQ section on satisfaction with different aspects of medical care, such as cost and the information provided by the beneficiary's medical care provider. The

questions about satisfaction with care represent the respondent's general opinion of all medical care received in the year preceding the interview.

### 10.3.36.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.36.3 Special Notes

N/A

## 10.3.37 Telemedicine (TELEMED)

### 10.3.37.1 Core Content

The Telemedicine segment contains data from TLQ about the availability of telemedicine visits and the beneficiary's use of telemedicine visits.

### 10.3.37.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.37.3 Special Notes

The TLQ was first added to the questionnaire in Winter 2022 to capture telemedicine information.

This questionnaire is administered the winter following the year of interest. Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the winter data collection period. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

## 10.3.38 Usual Source of Care (USCARE)

### 10.3.38.1 Core Content

The Usual Source of Care segment contains data from USQ on where and how the beneficiary typically seeks medical care.

### 10.3.38.2 Variable Definitions

Please see the Codebook for information regarding variables in this segment.

### 10.3.38.3 Special Notes

Several "other specify" variables are back coded as necessary into response options, but the verbatim text is not released. Back coded "other specify" variables include PVSPEC (provider specialty), LANGPREF (the language in which the beneficiary prefers to receive medical care), GETUSOS (how beneficiary normally gets to their provider), ACCOTHOS (why someone accompanies the beneficiary to their appointments), PLACEKND (the kind of place the beneficiary goes for medical care), and USWHYNAV (why the beneficiary's usual doctor is not available).



This questionnaire is administered the winter following the year of interest. Special non-response adjustment weights are included in the file to account for survey non-response from the fall to the winter data collection period. Note that counts of cases with positive Topical weights may vary within the data year and may change across years due to response rates, sample sizes, and fielding methods. The Topical weights account for these changes. Please see section 9.4.2 for information on using Topical weights.

### *10.3.39 Vision and Hearing (VISHEAR)*

#### **10.3.39.1 Core Content**

The Vision and Hearing segment contains information on the beneficiary's eye health and hearing status.

#### **10.3.39.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.39.3 Special Notes**

The "other specify" question EDOCTYOS is back coded as necessary into a variable (EDOCTYPE) capturing the type of doctor the beneficiary saw at their last eye exam, but the verbatim text is not released.

Six global disability questions are released to comply with HHS guidance. DISHEAR and DISSEE are included on the VISHEAR segment. Variables DISDECSN, DISWALK, DISBATH, and DISERRND are included on the NAGIDIS segment.

In 2021, changes were made to six existing vision-related questions in HFQ. The administration schedule of these items was updated to match other "ever" variables, inquiring if the beneficiary has ever had certain vision-related diseases or care. Prior to 2021, these items were asked every year but are now skipped if a beneficiary ever had a response of "yes" in a prior interview at these questions. Questions ECATARAC and ECCATOP were deleted and replaced with CATAREVR and CATAROPC to ask whether the beneficiary had ever had cataracts and had an operation for cataracts. Questions EGLAUCOM, ERETINOP, EMACULAR, and ELASRSUR were deleted and replaced with GLCOMEVR, RETINEVR, MACULEVR, and EYESURG. These new questions ask if the beneficiary had ever been told they had glaucoma, diabetic retinopathy, macular degeneration, or had laser eye surgery, respectively.

### *10.3.40 COVID-19 Facility Beneficiary-Level Supplement (FBENCVFL)*

#### **10.3.40.1 Core Content**

The COVID-19 Facility Beneficiary-Level Supplement segment contains information collected in the CV section in Fall 2021 and Winter 2022, including COVID-19 vaccination, diagnosis, testing, and care received by different types of health care providers.

#### **10.3.40.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.40.3 Special Notes**

This segment combines data from the Fall 2021 and Winter 2022 rounds, including recorded doses of COVID-19 vaccines. Many of the variables on the FBENCVFL segment are similar to variables available on the Survey File segments containing data from the COVID-19 Community Supplements.

### *10.3.41 COVID-19 Facility Facility-Level Supplement (FFACCVFL)*

#### **10.3.41.1 Core Content**

The COVID-19 Facility Facility-Level Supplement segment contains COVID-19 related information collected in the FC section in Fall 2021 and Winter 2022, including telehealth services provided, suspension of in-person services, prevention activities, prospective vaccination policies for staff and residents, personnel changes, mental health services provided, and social/recreational services provided.

#### **10.3.41.2 Variable Definitions**

Please see the Codebook for information regarding variables in this segment.

#### **10.3.41.3 Special Notes**

This segment combines data from the Fall 2021 and Winter 2022 rounds.

### *10.3.42 Weights*

For information about the ever enrolled and continuously enrolled cross-sectional weights and two-year, three-year, and four-year longitudinal weights available in the Survey File LDS and obtaining weighted estimates using these files, please see section 9.4.

For discussion on how the weights files were created, please refer to the *MCBS Methodology Report*, which can be found on the CMS website at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks>.

## 11. REFERENCES

- Canadian Nutrition Society. "Canadian Nutrition Screening Tool." Accessed August 2021. <https://nutritioncareincanada.ca/sites/default/uploads/files/CNST.pdf>
- Centers for Disease Control and Prevention. "How to Protect Yourself & Others." Last modified January 26, 2023. <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>
- 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>.
- Centers for Medicare & Medicaid Services. "The Accountable Health Communities Health-Related Social Needs Screening Tool." Accessed August 2021. <https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf>
- Centers for Medicare & Medicaid Services. "Long-Term Care Facility Resident Assessment Instrument 3.0 User's Manual v1.17.1." October 2019.
- Eicheldinger, Celia, and Arthur Bonito. "More Accurate Racial and Ethnic Codes for Medicare Administrative Data." *Health Care Financing Review* 29, no. 3 (2008): 27-42.
- HealthIT.gov. "What is telehealth? How is telehealth different from telemedicine?" Last reviewed October 17, 2019. <https://www.healthit.gov/faq/what-telehealth-how-telehealth-different-telemedicine>.
- Kalton, Graham, and Daniel Kasprzyk. "The Treatment of Missing Survey Data." *Survey Methodology* 12, no. 1 (1986): 1-16.
- National Center for Health Statistics. "COVID-19 Research and Development Survey (RANDS)." Centers for Disease Control and Prevention. 2020. <https://www.cdc.gov/nchs/covid19/rands.htm>.
- National Center for Health Statistics. "National Health and Nutrition Examination Survey." Centers for Disease Control and Prevention Accessed August 2021. <https://wwwn.cdc.gov/nchs/nhanes/>
- National Institutes of Health, National Cancer Institute. "Diet History Questionnaire." Accessed August 2021. <https://epi.grants.cancer.gov/dhq/forms/dhq1.2007.sample.pdf>
- National Institutes of Health, National Cancer Institute. "Diet History Questionnaire III (DHQ III)." Accessed August 2021. <https://epi.grants.cancer.gov/dhq3/index.html>
- University of Wisconsin School of Medicine Public Health. "2020 Area Deprivation Index v3.2." <https://www.neighborhoodatlas.medicine.wisc.edu>
- U.S. Census Bureau. "Phase 3.5 Household Pulse Survey." Accessed February 2023. [https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-5\\_Questionnaire\\_07\\_20\\_22\\_English.pdf](https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-5_Questionnaire_07_20_22_English.pdf)
- U.S. Census Bureau. American Community Survey (ACS) and November 2019 Current Population Survey (CPS). "Computer and Internet Use Supplement." <https://www.census.gov/data/datasets/2019/demo/cps/cps-computer.html>
- Wolter, Kirk. *Introduction to variance estimation*. Springer Science & Business Media, 2007.

# APPENDICES

## 12. APPENDICES

### Appendix A: MCBS Common Definitions

**Activities of daily living (ADLs):** Activities of daily living are activities related to personal care. They include bathing or showering, dressing, getting in and out of bed or a chair, walking, using the toilet, and eating.

**Baseline interview:** The initial questionnaire administered in the fall round of the year the beneficiary is selected into the sample (interview #1).

**Beneficiary:** Beneficiary refers to a person receiving Medicare services who may or may not be participating in the MCBS.<sup>38</sup> Beneficiary may also refer to an individual selected from the MCBS sample about whom the MCBS collects information.

**Claim-only event:** A claim-only event is a medical service or event known only through the presence of a Medicare FFS claim from administrative data. This means that the event represented in the data could not be reconciled with a corresponding survey-reported event.

**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.

**Company clinic:** A doctor's office or clinic, which is operated principally for the employees (and sometimes their dependents) of a particular company or business.

**Continuing interview:** The questionnaire administered as beneficiaries progress through the study (interviews #2-11).

**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 dis-enrolled or died prior to their fall interview, residents of foreign countries, and residents of U.S. possessions and territories.

**Core sections:** These sections of the MCBS Questionnaire are of critical purpose and policy relevancy to the MCBS. They may be fielded every round or on a seasonal basis.

**Coronavirus (COVID-19 or SARS-CoV-2):** An illness caused by a coronavirus discovered in December 2019 that can spread person to person. Symptoms range from mild (or no symptoms) to severe illness.<sup>39</sup> 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).

**Crossover:** A respondent who enters a long-term care facility setting (e.g., nursing homes) or who alternates between a community and a facility setting.

**Current-year enrollee:** Beneficiaries who were eligible and enrolled in Medicare (Parts A or B) anytime from January 1 to December 31 of the year the sample was selected.

<sup>38</sup> <https://www.cms.gov/Medicare/Medicare-General-Information/MedicareGenInfo/index.html>

<sup>39</sup> "How to Protect Yourself & Others," Centers for Disease Control and Prevention, last modified January 26, 2023, <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>

**Current-year enrollee:** Beneficiaries who were eligible and enrolled in Medicare (Parts A or B) anytime from January 1 to December 31 of the year the sample was selected.

**Doctor:** This includes both medical doctors (M.D.) and doctors of osteopathy (D.O.). It does not include chiropractors, nurses, technicians, optometrists, podiatrists, physician's assistants, physical therapists, psychologists, mental health counselors, or social workers. Generic specialties shown in parentheses following one of the specialties were coded as the specialty. For example, if the respondent mentioned a "heart" doctor, cardiology was coded. Generic answers not listed were not converted to specialties.

**Doctor's office or group practice:** This refers to an office maintained by a doctor or a group of doctors practicing together; generally, the patient makes an appointment to see a particular physician.

**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.

**Exit interview:** Conducted in the winter round, this final interview completes the respondent's participation in the MCBS (interview #11) and captures any unreported utilization and cost information from the prior year.

**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.

**Fee-for-Service (FFS) payment:** FFS is a method of paying for medical services in which each service delivered by a provider bears a charge. This charge is paid by the patient receiving the service or by an insurer on behalf of the patient.

**Field interviewer:** The principal contact for collecting and securing respondent data.

**Field manager:** A supervisor who motivates and manages a group of field interviewers to meet the goals of high-quality data collection on time and within budget limits.

**Free-standing surgical center:** A facility performing minor surgical procedures on an outpatient basis, and not physically connected to a hospital. Note that a unit performing outpatient procedures connected with a hospital (either physically or by name) is referred to as a hospital outpatient department/clinic.

**Gap days:** Gap days are periods during the calendar year in which a sample person was enrolled in Medicare but was not covered by a survey interview.

**Home:** This includes situations where the doctor comes to the beneficiary, rather than the beneficiary going to the doctor. Here, "home" refers to anywhere the beneficiary was usually staying at the time of the medical provider's visit. It may be the beneficiary's home, the home of a friend, a hotel room, etc.

**Hospital emergency room:** This means the emergency room of a hospital. "Urgent care" centers are not included. (NOTE: All hospital emergency room visits were included, even if the beneficiary went there for a "non-emergency" condition such as a cold, flu, or intestinal disorder.) A physician, nurse, paramedic, physician extender, or other medical provider may administer the health care.

**Hospital outpatient department:** A unit of a hospital, or a facility connected with a hospital, providing health and medical services, health education, health maintenance, preventive services, diagnosis, treatment, surgery, and rehabilitation to individuals who receive services from the hospital but do not require

hospitalization or institutionalization. Outpatient clinics can include obesity clinics; eye, ear, nose, and throat clinics; alcohol and drug abuse clinics; physical therapy clinics; kidney dialysis clinics; and radiation therapy clinics. The outpatient department may or may not be physically attached to a hospital, but it must be associated with a hospital.

**Incoming Panel sample (formerly known as Supplemental Panel):** A statistically sampled group of beneficiaries that enter the MCBS in the fall 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., 2015 Panel) in which they were selected.

**Instrumental activities of daily living (IADLs):** Instrumental activities of daily living are activities related to independent living. They include preparing meals, managing money, shopping for groceries or personal items, performing light or heavy housework, and using a telephone. If a beneficiary had any difficulty performing an activity by himself/herself, or did not perform the activity at all, because of health problems, the person was deemed to have a limitation in that activity. The limitation may have been temporary or chronic at the time of the survey. Facility interviewers did not ask about the beneficiary's ability to prepare meals or perform light or heavy housework, since they are not applicable to the beneficiary's situation; however, interviewers did question proxies about the beneficiary's ability to manage money, shop for groceries or personal items, or use a telephone.

**Internal Sample Control File:** A data file that contains every beneficiary sampled back through the beginning of MCBS. The file contains sampling information, year of selection, primary sampling unit, secondary sampling unit, contact information, and other sampling demographic information as well as final disposition codes to indicate completion status per round, component fielded per round, dates of death, and lost entitlement information.

**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.

**Medical clinic:** This refers to any group of doctors or other health professionals who have organized their practice in a clinic setting and work cooperatively; generally, patients either come in without an appointment or make an appointment and see whatever health professional is available.

**Medicare:** Medicare is the federal health insurance program for people who are 65 and 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.

**Medicare Managed Care Organization (MCO)/Health Maintenance Organization (HMO):** This is an organization that provides a full range of health care coverage in exchange for a fixed fee/co-pay. Some managed care plans require that plan members receive all medical services from one central building or location. Formerly referenced only as HMOs, these organizations are now referred to with terms such as Medicare MCOs/HMOs/MA/Part C.

**Minimum Data Set (MDS):** The MDS is part of the federally mandated process for clinical assessment of all residents in Medicare and Medicaid certified nursing homes. For more information, please visit <https://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/Minimum-Data-Set-3-0-Public-Reports/index>.

**Neighborhood/family health center:** A non-hospital facility which provides diagnostic and treatment services, frequently maintained by government agencies or private organizations.

**Other clinic:** A non-hospital facility clinic that is not already listed in the other clinic categories. Some examples include a “free” clinic, a family planning clinic, or military base clinic.

**Outcome and Assessment Information Set (OASIS):** The instrument/data collection tool used by CMS to collect and report performance data by Medicare-certified home health agencies. For more information, please visit <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits>.

**Panel:** See Incoming Panel sample.

**Personal health care expenditures:** Personal health care expenditures consist of health care goods and services purchased directly by individuals. They exclude public program administration costs, the net cost of private health insurance, research by nonprofit groups and government entities, and the value of new construction put in place for hospitals and nursing homes.

**Prescription drugs:** The basic unit measuring use of prescription drugs is a single purchase of a single drug in a single container. Prescription drug data are included for beneficiaries living in the community and in a facility; Prescription drugs administered during an inpatient hospital stay are not included.

**Primary Sampling Unit (PSU):** PSU 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 or 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:** Hispanic origin and race are two separate and distinct categories. Persons of Hispanic origin may be of any race or combination of races. Hispanic origin includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or Spanish origin. For the MCBS, responses to beneficiary race and ethnicity questions are reported by the respondent. More than one race may be reported. For conciseness, the text, tables, and figures in this document use shorter versions of the terms for race and Hispanic or Latino origin specified in the Office of Management and Budget 1997 Standards for Data on Race and Ethnicity. Beneficiaries reported as White and not of Hispanic origin were coded as White non-Hispanic; beneficiaries reported as Black/African American and not of Hispanic origin were coded as Black non-Hispanic; beneficiaries reported as Hispanic, Latino/Latina, or of Spanish origin, regardless of their race, were coded as Hispanic. The "Other" race category includes other single races not of Hispanic origin (including American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander), Two or More Races, or Unknown Races.

**Reference Period:** The timeframe to which a questionnaire item refers.

**Residence status:** Medicare beneficiaries who only completed Community interviews during the calendar year are categorized as living only in the community. Medicare beneficiaries for whom only Facility interviews were completed during the calendar year are categorized as living only in facilities. Beneficiaries who completed at least one Community interview and for whom at least one Facility interview was conducted during the year are classified as living in both community and facility.

**Respondent:** Respondent refers to a 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 (i.e., the Facility respondent).

**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).

**Rural health clinic:** A clinic that provides outpatient services, routine diagnostic services for individuals residing in an area that is not urbanized and is designated as a health staff shortage area or an area with a shortage of personal health services. The clinic can also provide outpatient services that include physician services, services and supplies provided under the direction and guidance of a physician by nurse practitioner, physician assistants, and treatment of emergency cases. These services are usually provided at no charge except for the amount of any deductible or coinsurance amount.

**Sample person:** An individual beneficiary selected from MCBS' Incoming Panel sample to participate in the MCBS survey.

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

**Skilled nursing facility (SNF):** A facility (which meets specific regulatory certification requirements) which primarily provides inpatient skilled nursing care and related services to patients who require medical, nursing,

or rehabilitative services but does not provide the level of care or treatment available in a hospital. (Source: <https://www.cms.gov/apps/glossary/default.asp?Letter=S&Language=English>)

**Survey-reported event:** A survey-reported event is a medical service or event reported by a respondent during an interview. The event may have been matched to a Medicare FFS claim from administrative data, or it may be a survey-only event, in which case it was not matched to a Medicare claim and is only known through the survey.

**Telehealth:** The use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, and public health and health administration. Technologies include videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications. Telehealth is different from telemedicine because it refers to a broader scope of remote health care services than telemedicine. While telemedicine refers specifically to remote clinical services, telehealth can refer to remote non-clinical services, such as provider training, administrative meetings, and continuing medical education, in addition to clinical services.<sup>40</sup>

**Telemedicine:** The use of remote clinical services, such as videoconferencing for consultations with health professionals.<sup>41</sup>

**Topical sections:** Sections of the MCBS Questionnaire that collect information on special interest topics. They may be fielded every round or on a seasonal basis. Specific topics may include housing characteristics, drug coverage, and knowledge about Medicare.

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

**Walk-in urgent center:** A facility not affiliated with a nearby hospital, offering services for acute conditions (e.g., flu, virus, sprain). Typically, people are seen without appointments (i.e., walk-ins).

<sup>40</sup> "What is telehealth? How is telehealth different from telemedicine?" HealthIT.gov, last reviewed October 17, 2019, <https://www.healthit.gov/faq/what-telehealth-how-telehealth-different-telemedicine>

<sup>41</sup> "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: MCBS Rounds by Data Year and Season

Year	Winter	Summer	Fall
<b>1991</b>	n/a	n/a	1
<b>1992</b>	2	3	4
<b>1993</b>	5	6	7
<b>1994</b>	8	9	10
<b>1995</b>	11	12	13
<b>1996</b>	14	15	16
<b>1997</b>	17	18	19
<b>1998</b>	20	21	22
<b>1999</b>	23	24	25
<b>2000</b>	26	27	28
<b>2001</b>	29	30	31
<b>2002</b>	32	33	34
<b>2003</b>	35	36	37
<b>2004</b>	38	39	40
<b>2005</b>	41	42	43
<b>2006</b>	44	45	46
<b>2007</b>	47	48	49
<b>2008</b>	50	51	52
<b>2009</b>	53	54	55
<b>2010</b>	56	57	58
<b>2011</b>	59	60	61
<b>2012</b>	62	63	64
<b>2013</b>	65	66	67
<b>2014</b>	68	69	70
<b>2015</b>	71/72	71/72	73
<b>2016</b>	74	75	76
<b>2017</b>	77	78	79
<b>2018</b>	80	81	82
<b>2019</b>	83	84	85
<b>2020</b>	86	87	88
<b>2021</b>	89	90	91
<b>2022</b>	92	93	94
<b>2023</b>	95	96	97

## Appendix C: Sample Code<sup>42</sup>

### *Joining Segments within the 2021 Survey File LDS*

Data users can join segments within and/or across the Survey File and Cost Supplement File. What follows below is a hypothetical research question with sample SAS code for the construction of an analytic file. In this example, the MCBS is interested in studying the self-reported general health for Medicare beneficiaries living in the community with diabetes.

First, there are two measures required to identify our study population: residence status and self-reported diabetes. Variables corresponding to these measures can be found in the following Survey File segments, respectively: Demographics (DEMO) and Chronic Conditions (CHRNCOND). General health information is found in the General Health (GENHLTH). To ensure estimates are representative of the continuously enrolled Medicare population, the MCBS will also require weights from the CENWGTS file. Please note that if using an MCBS Survey File LDS Topical segment (such as ACCSSMED, CHRNPAIN, etc.), users should instead join onto the Topical segment and use the adjusted weights included with that segment.

Below, is an example of how multiple Survey File segments can be joined with the CENWGTS segment in SAS using BASEID as the key variable. Sample code is provided for two alternative methods for joining MCBS data, one using PROC SQL and one using SAS merge; users can use their preferred method. When joining segments, all observations in the CENWGTS segment should be preserved.

#### **SAS (PROC SQL Join Method)**

```
PROC SQL;
CREATE TABLE joined AS
  SELECT A.*,
         B.h_age,
         B.int_type,
         C.d_ocdtyp,
         D.genhelth
  FROM surveyyy.cenwgts AS A
  LEFT JOIN surveyyy.demo AS B
    ON A.baseid = B.baseid
  LEFT JOIN surveyyy.chrncond AS C
    ON A.baseid = C.baseid
  LEFT JOIN surveyyy.genhlth AS D
    ON A.baseid = D.baseid;
QUIT;
```

#### **SAS (SAS Merge Method)**

```
Data merged;
  merge surveyYY.CENWGTS (in = a)
        surveyYY.DEMO (keep = BASEID H_AGE INT_TYPE)
        surveyYY.CHRNCOND (keep = BASEID D_OCDTYP)
        surveyYY.GENHLTH (keep = BASEID GENHELTH);
  by BASEID;
  if a;
run;
```

<sup>42</sup> The "YY" in "costYY" and "surveyYY" refers to the data year of the Cost Supplement File and Survey File, respectively. Longitudinal code is represented with the convention of Y1, Y2, etc.

In order to segment the file to beneficiaries living in the community only, subset the file on the variable INT\_TYPE.

```
Data joined_surveyfile;
    set joined;
    where INT_TYPE = 'C'; /* denotes individuals living only in the community */
run;
```

Now there is an analytic file that includes all the Survey File variables and weights required to analyze general health for Medicare beneficiaries living in the community with diabetes. Data users can export the created dataset for use with R and Stata.

### *Repeated Cross-Sectional or Pooled Analysis (Section 9.7.2)*

#### **Sample code**

The sample code below demonstrates the steps involved in constructing a repeated cross-sectional or pooled analytic dataset and performing analysis. The example below estimates percent of Medicare beneficiaries that are dually eligible (i.e., enrolled in both Medicare and Medicaid programs) during the prior data year and the current data year.

Although the MCBS includes variables to obtain weighted estimates and estimated standard errors using Taylor-series linearization approach, the balanced repeated replication (BRR) method, also known as Fay's method, provides more analytic flexibility when performing analysis using pooled cross-sectional data.<sup>43</sup>

CMS generally recommends the BRR method of variance estimation to MCBS users because it requires neither the specification of strata and cluster definitions nor the specification of domain or subgroup definitions in subpopulation analyses, which are required for Taylor-series estimation and are common inadvertent omissions. However, the Taylor series method of variance estimation is also appropriate for experienced users who prefer this method or in instances where the BRR method is not possible in the available software. For these reasons, the MCBS data files include the variables SUDSTRAT and SUDUNIT, which are needed for Taylor-series estimation. The SAS functions %surveyglm and %surveygenmod appropriately allow for strata and cluster definitions. When using these functions (and in any other instances where Taylor series estimation is used), specify SUDSTRAT as the strata definitions and SUDUNIT as the cluster definitions.

The examples presented in this section involve multiple years of MCBS data and use replicate weights – a form of the BRR technique.

#### **Example**

/\* Join prior data year administrative records (HISUMRY) file with cross-sectional weights (CENWGTS) file \*/

#### **SAS (PROC SQL Join Method)**

```
PROC SQL;
CREATE TABLE mcbsY1 AS
    SELECT A.*,
           B.h_opmdcd
    FROM   surveyY1.cenwgts(DROP=version) AS A
```

<sup>43</sup> Given the rotating panel design of the MCBS, performing pooled cross-sectional analysis using Taylor-Series Linearization method of variance estimation will require additional adjustments to account for non-independence of beneficiaries across years in a multi-year dataset.

```

LEFT JOIN surveyY1.hisumry AS B
      ON A.baseid = B.baseid;
QUIT;

```

### SAS (SAS Merge Method)

```

data mcbsY1;
merge surveyY1.CENWGTS (in = a drop = VERSION)
      surveyY1.HISUMRY (keep = BASEID H_OPMDCD);
  by BASEID;
  if a;
run;

```

/\* Create Analytic Dataset for Repeated Cross-Sectional or Pooled Analysis \*/

/\* Join current data year administrative records (HISUMRY) file with cross-sectional weights (CENWGTS) file \*/

### SAS (PROC SQL Join Method)

```

PROC SQL;
CREATE TABLE mcbsY2 AS
  SELECT A.*,
         B.h_opmdcd
  FROM   surveyY2.cenwgts(DROP=version) AS A
  LEFT JOIN surveyY2.hisumry AS B
        ON A.baseid = B.baseid;
QUIT;

```

### SAS (SAS Merge Method)

```

data mcbsY2;
merge surveyY2.CENWGTS (in = a drop = VERSION)
      surveyY2.HISUMRY (keep = BASEID H_OPMDCD);
  by BASEID;
  if a;
run;

```

/\* Concatenate prior and current cross-sectional files \*/

```

data mcbs_analytic_file;
  set mcbsY1 mcbsY2;
run;

```

## SAS

\* Estimate Percent of Dually Eligible Medicare Beneficiaries (Pooled estimate representing the moving average of nationally representative year-specific estimates) using balanced repeated replication (Fay's method));

```
proc surveyfreq data = mcbs_analytic_file varmethod = brr (fay=.30);
```

```

  table H_OPMDCD;
  weight CEYRSWGT;
  repweights CEYRS001-CEYRS100;
run;

```

\* Estimate Percent of Dually Eligible Medicare Beneficiaries by Year (nationally representative, year-specific estimates) using balanced repeated replication (Fay's method);

```
proc surveyfreq data = mcbs_analytic_file varmethod = brr (fay=.30);
```



```
table SURVEYYR * H_OPMDCD / row;
weight CEYRSWGT;
repweights CEYRS001-CEYRS100;
run;
```

## Stata

```
* Declare survey dataset
svyset _n [pweight = CEYRSWGT], brrweight(CEYRS001-CEYRS100) fay(.3) vce(brr)

* Estimate Percent of Dually Eligible Medicare Beneficiaries (Pooled estimate representing the
* moving average of nationally representative year-specific estimates)
svy brr, fay(.3): tab H_OPMDCD

* Estimate Percent of Dually Eligible Medicare Beneficiaries (nationally representative, year-specific estimates)
svy brr, fay(.3): tab H_OPMDCD SURVEYYR, column
```

## R

Note: Data users will need to install the 'survey' package to use the svrepdesign function below.

```
# Specify survey design object
mcbs <- svrepdesign(
  weights = ~CEYRSWGT,
  repweights = "CEYRS[001-100] +",
  type = "Fay",
  rho = 0.3,
  data = mcbs_analytic_file,
  combined.weights = TRUE
)

# Estimate Percent of Dually Eligible Medicare Beneficiaries by Year (Pooled estimate representing the moving
average of nationally representative year-specific estimates)
prop.table(svytable(~H_OPMDCD, design=mcbs))

# Estimate Percent of Dually Eligible Medicare Beneficiaries by Year (nationally representative, year-specific
estimates)
prop.table(svytable(~H_OPMDCD + SURVEYYR, design=mcbs), 2)
```

## *Conducting Subgroup Analyses with Appropriate Variance Estimation*

### Using the BRR method of variance estimation

Variance estimation can be impacted by selecting individuals prior to analysis. If the BRR variance estimation method is used, subgroup analyses can be conducted by limiting the dataset to the desired sub-sample. There are multiple ways to conduct subgroup analyses using BRR.

For indicator variables in three-way tables, you can create flags to help you identify the population of interest. For instance, if you are interested in the prevalence of diabetes in men versus women, but only in the over-65 population in Medicare Advantage, you could use the following SAS code:

```
proc surveyfreq data=mcbsdata VARMETHOD = brr (fay=.30);
  table GENDER * DIABETES * OVER65MA / col notot;
```

```
weight CEYRSWGT;
repweights CEYRS001-CEYRS100;
run;
```

This sample code assumes an analytic data set, including replicate weights, in which the data user has created binary analytic variables for GENDER and DIABETES, as well as a flag variable, OVER65MA, to identify the population of interest for this analysis. In this case, the flag is equal to 1 if the beneficiary is over 65 and in Medicare Advantage, and equal to 0 otherwise.

Since variance estimation using the BRR approach permits limiting the dataset to the desired sub-sample of interest, the following SAS code can also be used to achieve the same result through subgroup analysis:

```
data mcbsdata_subset;
  set mcbsdata;
  if OVER65MA = 1 then output;
run;

proc surveyfreq data=mcbsdata_subset VARMETHOD = brr (fay=.30);
  table GENDER * DIABETES / col notot;
  weight CEYRSWGT;
  repweight CEYRS001-CEYRS100;
run;
```

### Using the Taylor Series linearization method of variance estimation

If other variance estimation methods, such as Taylor Series linearization are used, the correct way to analyze MCBS data is to employ domain statements (in SAS: proc surveymeans, surveylogistic, and surveyreg) or indicator variables in three-way tables (in SAS: proc surveyfreq). 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.

For indicator variables in three-way tables, data users can create flags to identify the population of interest. The variables SUDSTRAT (sampling strata) and SUDUNIT (primary sampling unit) are included for variance estimation using the Taylor Series linearization method. This method does not require replicate weights. For instance, if a data user is interested in the prevalence of diabetes in men versus women, but only in the over-65 population in Medicare Advantage, they could use the following SAS code:

```
proc surveyfreq data=mcbsdata;
  table GENDER * DIABETES * OVER65MA / col notot;
  strata SUDSTRAT;
  cluster SUDUNIT;
  weight CEYRSWGT;
run;
```

## Appendix D: Initial Interview Variables

### Exhibit D.1: Initial Interview Variables

Segment	Topic	LDS Variable Name
DEMO	Date of Birth	D_DOB
DEMO	Sex	ROSTSEX
DEMO	Hispanic Origin	HISPORIG HISPORMA HISPORPR HISPORCU HISPOROT
DEMO	Race	D_RACE2 RACEAA RACEAS RACENH RACEWH RACEAI
DEMO	Asian Race Subcategories	RACEASAI RACEASCH RACEASFI RACEASJA RACEASKO RACEASVI RACEASOT
DEMO	Pacific Islander Race Subcategories	RACEPIHA RACEPIGU RACEPISA RACEPIOT
DEMO	Military Service	SPAFEVER SPAFVIET SPAFKORE SPAFWWII SPAFGULF SPAFIRAF SPAFPEAC SPNGEVER SPNGALL SPNGDSBL SPVARATE
DEMO	Number of Children	SPCHNLNM
DEMO	Limited English Proficiency	ENGWELL ENGREAD OTHLANG WHATLANG
DEMO	Education	SPDEGRCV
DEMO	Income	INCOME

Segment	Topic	LDS Variable Name
CHRNCOND	Reason for Medicare Eligibility	EMHBP
		EMMYOCAR
		EMCHD
		EMCFAIL
		EMHRTCND
		EMSTROKE
		EMCSKIN
		EMCANCER
		EMARTERY
		EMARTHRH
		EMARTOST
		EMARTHOT
		EMMENTAL
		EMALZMER
		EMDEMENT
		EMDEPRSS
		EMPSYCHO
		EMOSTEOP
		EMBRKHIP
		EMPARKIN
		EMEMPHYS
		EMPPARAL
		EMAMPUTE
		EMDIABTS
		EMOTHOS
CHRNCOND	Number of Medications Taken for Blood Pressure	HYPEMANY
FACCHAR	Place of Residence before Facility Admission	BEFORADM
FACCHAR	Household Makeup before Facility Admission	D_LIVWTH

## Appendix E: Table of Links to MCBS Documentation

MCBS Resources	Links
CMS MCBS website	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS">https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS</a>
MCBS LDS file information	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/Data-Disclosures-Data-Agreements/DUA_-_NewLDS">https://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/Data-Disclosures-Data-Agreements/DUA_-_NewLDS</a>
MCBS PUF	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/MCBS-Public-Use-File/index">https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/MCBS-Public-Use-File/index</a>
CMS Chronic Conditions Warehouse (CCW)	<a href="https://www.ccwdata.org/web/guest/home/">https://www.ccwdata.org/web/guest/home/</a>
Data User's Guides, Methodology Reports, Codebooks, and LDS Variable Crosswalks	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks">https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Codebooks</a>
Chartbook, and PUF Table Packages	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Tables">https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Tables</a>
Early Look, Data Briefs, Infographics, and Tutorials	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Briefs">https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Data-Briefs</a>
Bibliography	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Bibliography">https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Bibliography</a>
Questionnaires and Questionnaire User Documentation	<a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Questionnaires">https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Questionnaires</a>
MCBS Interactives – COVID-19 Data Tool, Survey File PUF Data Tool, and Financial Well-being Data Tool <sup>44</sup>	<a href="https://mcbs-interactives.norc.org/">https://mcbs-interactives.norc.org/</a>

<sup>44</sup> The MCBS Interactives consist of three data tools, the Financial Well-being Data Tool, the Survey File PUF Data Tool and the COVID-19 Data Tool. Each tool contains multiple interactive dashboards that allow users to sort and visualize data according to a variety of demographic and health-related factors.

## Appendix F: 2021 MCBS Survey File Segments and Historic RIC Segments

Survey File Segment	Segment Abbrev	Historic RIC Segment
Access to Care	ACCESSCR	3
Access to Care, Medical Appointments	ACCSSMED	3
Administrative Utilization Summary	ADMNUTLS	A
Assistance	ASSIST	2H
Chronic Conditions	CHRNCOND	2, 2P
Chronic Conditions Flags	CHRNCDFL	N/A
Chronic Pain	CHRNPAIN	N/A
Cognitive Measures	COGNFUNC	N/A
Community COVID-19 Vaccine Dosage	COMMDOSE	N/A
COVID-19 Experiences	COVIDEXP	N/A
Demographics	DEMO	1, 9, A, K
Diabetes	DIABETES	N/A
Facility Assessments	FACASMNT	2F
Facility Characteristics	FACCHAR	7, 7S
Falls	FALLS	2, 2P
Food Insecurity	FOODINS	N/A
General Health	GENHLTH	2
Health Insurance Summary	HISUMRY	4, A
Health Insurance Timeline	HITLINE	4, A
Household (HH) Characteristics	HHCHAR	5
Income and Assets	INCASSET	1, Income Asset
Interview Characteristics	INTERV	4, 8, 9, K
Medicare Advantage (MA) Plan Questions	MAPLANQX	H
Medicare Plan Beneficiary Knowledge	MCREPLNQ	KN
Minimum Data Set	MDS3	MDS, 10
Mental Health	MENTHLTH	N/A
Mobility	MOBILITY	N/A
Multiple Year Enrollment	MYENROLL	N/A
Nagi Disability	NAGIDIS	2, 2H, 2P
Nicotine and Alcohol	NICOALCO	2, 2P
Outcome and Assessment Information	OASIS	OAS, 10
Patient Activation	PNTACT	PA
Preventive Care	PREVCARE	2, 2P
RX Medications	RXMED	RX
Residence Timeline	RESTMLN	6, 9, A, K
Satisfaction with Care	SATWCARE	3
Telemedicine	TELEMED	N/A
Usual Source of Care	USCARE	2, 3

<b>Survey File Segment</b>	<b>Segment Abbrev</b>	<b>Historic RIC Segment</b>
Vision and Hearing	VISHEAR	2
Weights	CENWGTS EVRWGTS LNG2WGTS LNG3WGTS LNG4WGTS	X, XE, X3, X4
COVID-19 Facility Beneficiary-Level Supplement	FBENCVFL	N/A
COVID-19 Facility Facility-Level Supplement	FFACCVFL	N/A
Fee-for-Service Claims	FFS	Research Claims