MMLEADS Public Use File:
A Methodological Overview

September 2020

I. Introduction

In 2012, approximately 10.4 million persons were covered by both Medicare and Medicaid[1]. Most of these "Medicare-Medicaid enrollees" qualified for both programs by being either very low income and age 65+ years or very low income and disabled. Federal and state policymakers and researchers have long recognized the challenge of combining Medicare and Medicaid data to determine total payments and service use for dually enrolled populations.

HealthAPT, LLC obtains Medicare claims data files from CMS each week and then loads them to the CMS Chronic Condition Warehouse (CCW). They also obtain annual Medicaid Analytic eXtract (MAX) data files and load these to the CCW after assigning the unique CCW person-level identifier (commonly referred to as the BENE_ID). The CCW BENE_ID enables investigators to understand the full range of services paid by Medicare and Medicaid for those with dual enrollment.

The Medicare-Medicaid Linked Enrollee Analytic Data Source (MMLEADS) Version 2.0 files were developed to integrate the Medicare and Medicaid data in order to facilitate the study of health care experiences of Medicare-Medicaid dually enrolled beneficiaries. These files are unique in that they give users the ability to examine information regarding enrollment, service use and payments for both payers. This public use file is based exclusively on information from the annual MMLEADS V2.0 files, which were created using manipulated CCW data (the ultimate source was generally CMS administrative data). There are annual MMLEADS Public Use Files (PUF) for calendar years 2006-2012. CCW has obtained MAX data for all states for 1999 –2012. These files contain information on the demographics, enrollment, eligibility, spending, service utilization, and prevalence of certain chronic conditions by state.

The goal of this user guide is to document and describe the contents of the MMLEADS PUFs. This overview is divided into the following six sections:

A. Data Sources
B. Study Population
C. Demographic Characteristics

[1] Data Analysis Brief: Medicare-Medicaid Dual Enrollment 2006 through 2018. Figure 3 (https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/DataStatisticalResources/Downloads/MedicareMedicaidDualEnrollmentEverEnrolledTrendsDataBrief2006-2018.pdf).

D. Enrollment and Coverage variables
E. Disease variables
F. Cost and Use Measures

All years of data are included in a single downloadable Excel file, with separate sheets for each year. This Methodological Overview paper provides an explanation of the sample population and methodology that we used to calculate all of the indicators in the PUF.

To be able to release this file as a PUF, we employed standard CMS data suppression rules. Cell sizes smaller than 11 cannot be displayed; therefore the asterisk (*) is used to indicate that data were suppressed. Furthermore, if only one cell is suppressed for a measure, the second lowest cell is also suppressed to prevent re-identification. There are also times when a metric does not apply to a subpopulation (e.g., variables regarding Medicare enrollment and use are not applicable to people enrolled only in Medicaid, and vice versa). When a cell is not applicable, it contains a period (.).

II. Methodology

A. Data Sources

The primary data source for the MMLEADS PUF is CMS's Chronic Conditions Data Warehouse (CCW). The CCW contains 100 percent of Medicare enrollment data, as well as claims for beneficiaries who are enrolled in the fee-for-service (FFS) program. It also contains MAX files for all states that have submitted data. The data summarized in the PUF includes all beneficiaries/enrollees who are in the MMLEADS population. Payment information regarding managed care premiums is contained in the PUF; however, the remainder of the payment and use summaries in the file, as well as the condition categories, rely exclusively on FFS claims. As a result, information regarding particular services used or prevalence of conditions is not available for Medicare or Medicaid managed care enrollees; this means that for some states we do not have information regarding the population.

The CCW was designed as a database to support research on chronically ill beneficiaries, so it also contains valuable features, such as a unique identifier for each beneficiary that makes it possible to track spending for individual beneficiaries over time and variables that indicate if a beneficiary has one or more of 27 specific chronic conditions. In addition, the CMS Medicare-Medicaid Coordination Office (MMCO) has developed pre-defined variables for many other conditions in order to enhance the ability to conduct research on the Medicare-Medicaid population. These additional variables are related to mental health and tobacco use, physical or intellectual disability, and other clinical conditions.

The detailed nature of the CCW claims data makes it possible to analyze differences in cost and/or utilization for specific settings of care or types of services. Some of the settings include inpatient

hospital, outpatient hospital, multiple post-acute care settings (long-term care hospital, inpatient rehabilitation facility, skilled nursing facility, and home health agency), hospice, physicians, laboratories, and suppliers of durable medical equipment. The data in these PUFs summarizes all claims for services in a calendar year (files for 2006-2012).

B. Study Population

Since the primary goal of the MMLEADS PUF is to examine utilization and payments for Medicare-Medicaid dual enrollees, MMLEADS includes all people who were dually enrolled at any time during the calendar year. In addition, to facilitate comparisons, MMLEADS includes the Medicare only and the Medicaid only (with disability) populations.

The 2012 MMLEADS PUF consists of 60,043,743 unique individuals, comprising the following mutually exclusive categories: Medicare-Medicaid dually enrolled (10,453,206), Medicare-only (43,143,977), and Medicaid-only with a disability (6,446,560).

The PUF analytic files exclude certain categories of Medicaid enrollees to make comparisons as meaningful as possible. MMLEADS does not contain information for the Medicaid-only *without* disability population (57,275,852 total individuals largely consisting of women and children) because this group does not particularly resemble the Medicare-Medicaid population, and therefore is not appropriate to serve as a comparison group for Medicare-Medicaid dual enrollees.

To identify the subpopulations contained in the MMLEADS, we classify people into one of the following four Medicare-Medicaid enrollment type groups:

1. Dually enrolled in Medicare and Medicaid

We used a monthly variable to identify individuals who were dually enrolled in Medicare and Medicaid at any given time over the course of the calendar year. The CCW Medicare variable names are DUAL_STUS_CD_01 - DUAL_STUS_CD_12; the original source of the monthly state-reported dual status codes is from the Medicare data in the CCW MBSF.

a. Full Benefit Dual

A person with any month indicating "full" Medicare and Medicaid benefits. This includes months where the DUAL_STUS_CD_*MM* is any of the following:

02 = Qualified Medicare beneficiary (QMB) and Medicaid coverage including RX,

04 = Specified Low-Income Medicare Beneficiary (SLMB) and Medicaid coverage including RX,

08 = Other Dual Eligibles (Non-QMB, SLMB, qualified working disabled individuals [QWDI], or qualifying individuals [QI]) w/Medicaid coverage including RX

b. QMB or Partial Benefit Dual

A person with any months as either a Qualified Medicare beneficiary (QMB-only) or eligible for "partial" benefits. This includes months where the DUAL_STUS_CD_*MM* is any of the following:
01 = QMB only
03 = SLMB only,
05 = QDWI,
06 = Qualifying Individuals

Note: if a person had both full dual and partial dual benefits during the year, then the annual MME value is full dual.

2. Medicare Only

If a person was Medicare enrolled and was not classified as Medicare-Medicaid dual eligible based on criteria listed in #1 for any month in the calendar year, the individual was classified as Medicare-only.

3. Medicaid Only Blind or with Disability

We used the monthly MAX uniform eligibility code variables (i.e., MAX_ELG_CD_MO_1 - MAX_ELG_CD_MO_12) to identify any person without dual eligibility for Medicare benefits who had any month indicating eligibility due to blindness or disability (values: 12= blind/disabled, cash, 22= blind/disabled, medically needy, 32= blind/disabled, poverty, 42= other blind/disabled, 3A= Breast and Cervical Cancer Act or 52= disabled, section 1115 demonstration expansion).

State Denominators

The PUF includes four rows of data for each state (note: the exception is for states without MAX data; there will be only three rows of data). We make the state determination using the last state where the person was enrolled in Medicare, or if Medicaid-only, it is the last Medicaid state for the year (i.e., we use last monthly Medicare state code from the CCW Master Beneficiary Summary File, which contains the state of residence according to the CMS Medicare enrollment database; if this is not available the source is the MAX Person Summary files [MAX PS]). If an individual is enrolled in Medicaid in more than one state during the year, all denominators, payment and use information for the enrollee is attributed to the last state of the year.

Note: Some people may have had more than one record in the source MAX PS if they were enrolled in Medicaid in more than one state during the course of a year. These records have been de-duplicated so that a single BENE_ID uniquely identifies a person. An algorithm was developed to assign each person to a state for each enrolled month during the year (i.e., the Medicaid state code associated with the largest amount of Medicaid payments for the person), then to an overall end of the year state – which uses the last value for the person for

the year (monthly variables in the Beneficiary/Enrollee File called D_STATE_CD_1-12). The demographic variables in the file (e.g., county, ZIP code, race, gender) are the variables associated with the final state of enrollment during the year (variable called STATE_CD). Additional details regarding these particular variables appear later in this document, in the section on the Beneficiary/Enrollee File.

The population is stratified into the four Medicare-Medicaid enrollment type groups, so that the sum of the "Number of People" column for these four rows is the state total in MMLEADS V2.0. The samples sizes and study population are depicted in Table 1; the data presented are national summaries – this information is available for each state. The first several columns of the PUF contain various population counts which can serve as denominators for measures contained within the file.

There are four main types of denominators that can be used to identify the study population for each row of data within the PUF:

1) Total enrolled count (called "Total People") – which is used for calculating all of the demographic variables (e.g., "Percent 85+ Years");
2) Total fee-for-service (FFS) enrollment counts (called "Number of People with FFS") – which counts either Medicare or Medicaid FFS enrollment. This denominator is used for calculating condition prevalence (e.g., Percent of people with heart failure") and can also be used to calculate per capita spending;
3) Gender-specific FFS enrollment counts (called "Number of Females with FFS" and "Number of Males with FFS"). This denominator is used for calculating condition prevalence for the four gender-specific conditions (e.g., "Percent of females with breast cancer"); and
4) User counts – for each particular type of service described within the PUF (e.g., "Number of people who used Medicare Part D prescription drugs" and "Number of people who used Medicaid physician services"). This denominator is associated with the total payments (e.g., Total Medicare Part D prescription drug costs" and "Total Medicaid physician payments"), and can be used to calculate cost per user.

C. Demographic Characteristics

In general, the summary information for the PUF employs information from the CCW Master Beneficiary Summary File for latest month of the year; the exception is for those who are Medicaid-only then we use the Medicaid variables from the MAX PS. This rule holds true for all of the demographic information (age, race, gender, state) in the file.

Age is calculated based on years at the end of the calendar year. We report data for beneficiaries/enrollees of all ages using either four groups: <40, 40-64, 65-84, or 85+ years, or two age groups (<65, 65+ years). The demographic characteristics of the population included in the MMLEADS PUF are illustrated in Table 2.

Table 1. Study Population for MMLEADS PUF

Number of People by Medicare-Medicaid Enrollment Type	2006	2007	2008	2009	2010	2011	2012
Total People	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Full Benefit	6,658,396	6,778,156	6,879,572	7,038,540	7,193,106	7,407,928	7,552,114
Partial Benefit	1,794,642	1,972,933	2,081,934	2,239,620	2,465,834	2,723,239	2,901,092
Medicare Only	37,165,285	37,943,550	38,888,919	39,644,709	40,430,007	41,586,093	43,143,977
Medicaid Only	5,229,737	5,321,332	5,525,149	5,793,730	6,016,138	6,293,301	6,446,560
Number of People with FFS							
Full Benefit	6,111,263	6,188,679	6,235,172	6,335,707	6,454,652	6,290,664	6,295,317
Partial Benefit	1,777,803	1,951,325	2,057,382	2,215,320	2,444,413	2,684,551	2,839,555
Medicare Only	28,517,682	27,683,059	27,307,254	26,992,818	27,186,475	24,838,185	25,090,451
Medicaid Only	2,395,601	2,415,559	2,283,570	2,334,351	2,391,176	2,454,779	2,244,908
Percent with all 12 months in FFS Medicaid							
Full Benefit	64.60%	64.20%	62.60%	62.10%	60.80%	59.80%	55.40%
Partial Benefit	95.00%	95.50%	95.80%	97.50%	97.60%	97.40%	96.10%
Medicare Only	.	.	.	.	.	.	.
Medicaid Only	45.80%	45.40%	41.30%	40.30%	39.70%	39.00%	34.80%
Percent with all 12 months in FFS Medicare							
Full Benefit	86.70%	85.00%	83.20%	82.00%	81.90%	71.40%	69.90%
Partial Benefit	83.80%	78.70%	75.60%	73.30%	72.80%	62.10%	60.30%
Medicare Only	76.50%	72.80%	70.00%	67.90%	67.10%	59.50%	57.90%
Medicaid Only	.	.	.	.	.	.	.

D. Enrollment and Coverage Variables

The Medicare claims in the CCW are generally fee-for-service (FFS) Part A and B claims only (i.e., encounter information for services provided by managed care plans, known as Medicare Advantage [MA] plans, is not available). Similarly, the Medicaid claims that appear in the source MAX files are generally FFS.

For many of the metrics in the PUF, the appropriate denominator for interpretation is the subset of the population who are FFS enrolled (column called "Number of People with FFS"). Therefore, we count the number of people with either Medicare FFS coverage all months alive during the year or Medicaid FFS coverage all months alive during the year. This FFS denominator should be used for understanding the population "at risk" for the conditions that are in the file (additional details appear in the Conditions section below). This variable is also partitioned into female/male and FFS enrolled (columns called "Number of Females with FFS" and "Number of Males with FFS").

The values for each of these columns are the denominators for the claims-based measures in the PUF; by examining the difference between the Number of People, you can determine whether information regarding the services received and associated payments describes the majority of the population or not. For some states there is high managed care penetration – which means the PUF does not contain service utilization information.

The PUF contains summary variables to identify the type(s) of coverage for each population subset (denominator is "Number of People"):

- Percent with all 12 months in FFS Medicaid
- Percent with all 12 months in FFS Medicare
- Percent with all 12 months with Medicare Part D coverage (note that all prescription drug data are available, whether the person is enrolled in MA or FFS; that is, we have data for Medicare Advantage with Prescription Drug coverage [MA-PD] events as well as for stand-alone prescription drug plans [PDPs])

Note: If you are interested in the number people with FFS Medicaid, for example, you would need to calculate this quantity by taking the "Number of People" and multiplying by "Percent with all 12 months in FFS Medicaid".

Four columns document the proportion of people according to the current reason for Medicare enrollment:

- Percent of Medicare beneficiaries with benefits due to Old Age or Survivor's Insurance
- Percent of Medicare beneficiaries with benefits due to Disability Insurance
- Percent of Medicare beneficiaries with benefits due to ESRD with or without Disability Insurance

The reason for Medicaid enrollment is described using either the Medicaid Maintenance Assistance Status (MAS) or Medicaid Basis of Eligibility (BOE), both of which are derived from the monthly MAX uniform eligibility code variables (i.e., MAX_ELG_CD_MO_*MM*) for the last month of the year.

1. The Medicaid Maintenance Assistance Status (MAS), derived from the first digit of the monthly MAX uniform eligibility code variables (i.e., MAX_ELG_CD_MO_*MM*), which we roll-up into the following five categories:
   - Percent of Medicaid enrollees with MAS – Receiving Cash or Section 1931
   - Percent of Medicaid enrollees with MAS – Medically Needy
   - Percent of Medicaid enrollees with MAS – Poverty Related
   - Percent of Medicaid enrollees with MAS – 1115 Demonstration Expansion
   - Percent of Medicaid enrollees with MAS – unclassified, unknown, or not enrolled

2. The Medicaid Basis of Eligibility (BOE), derived from the 2nd digit of the monthly MAX uniform eligibility code variables (i.e., MAX_ELG_CD_MO_*MM*), which we roll-up into the following six categories:
   - Percent of Medicaid enrollees with BOE – Aged
   - Percent of Medicaid enrollees with BOE – Blind/Disabled
   - Percent of Medicaid enrollees with BOE – Child
   - Percent of Medicaid enrollees with BOE – Adult
   - Percent of Medicaid enrollees with BOE – Breast and Cervical Cancer Prevention Act
   - Percent of Medicaid enrollees with BOE – Other/Unknown or not enrolled

Table 2. Demographic Characteristics of Population in MMLEADS PUF

Number of FFS People by Medicare-Medicaid Enrollment Type	2006	2007	2008	2009	2010	2011	2012
Age: Percent 65+ Years							
Full Benefit	61.80%	61.30%	60.80%	60.20%	59.80%	59.30%	59.10%
Partial Benefit	62.50%	61.90%	60.80%	59.70%	58.90%	58.10%	57.80%
Medicare Only	88.80%	88.80%	88.90%	89.00%	88.90%	89.00%	89.20%
Medicaid Only	*	*	*	0.70%	*	.	.
Gender: Percent Female							
Full Benefit	62.90%	62.60%	62.40%	62.10%	61.90%	61.60%	61.40%
Partial Benefit	61.30%	61.20%	61.00%	60.70%	60.50%	60.10%	59.70%
Medicare Only	54.10%	54.00%	53.80%	53.70%	53.50%	53.30%	53.20%
Medicaid Only	50.30%	49.90%	49.50%	49.00%	48.70%	48.30%	47.90%
Race: Percent Non-Hispanic White							
Full Benefit	57.20%	56.70%	56.10%	55.70%	55.10%	54.60%	54.00%
Partial Benefit	65.00%	64.00%	64.10%	63.70%	63.30%	62.60%	61.90%
Medicare Only	83.50%	83.30%	83.00%	82.70%	82.40%	82.00%	81.50%
Medicaid Only	45.80%	45.60%	45.30%	44.70%	44.30%	43.20%	42.00%
Race: Percent African American							
Full Benefit	19.30%	19.30%	19.30%	19.20%	19.30%	19.30%	19.40%
Partial Benefit	21.80%	21.70%	21.70%	21.80%	21.80%	22.00%	22.20%
Medicare Only	7.50%	7.50%	7.60%	7.60%	7.70%	7.70%	7.73%
Medicaid Only	27.10%	27.00%	26.90%	26.80%	26.40%	26.20%	25.70%
Medicare Enrollment: Percent of Medicare beneficiaries with benefits due to Disability Insurance							
Full Benefit	37.20%	37.90%	38.70%	39.50%	40.10%	40.80%	41.20%
Partial Benefit	36.60%	37.80%	39.20%	40.60%	41.60%	42.50%	43.10%
Medicare Only	10.90%	11.20%	11.40%	11.60%	11.90%	12.00%	12.10%
Medicaid Only	.	.	.	.	.	.	.
Medicaid Enrollment: Percent of Medicaid enrollees with MAS - Receiving Cash or Section 1931							
Full Benefit	50.10%	50.30%	50.30%	48.40%	47.70%	47.40%	47.00%
Partial Benefit	0.70%	0.93%	0.92%	0.93%	0.99%	0.63%	0.63%
Medicare Only	.	.	.	.	.	.	.
Medicaid Only	76.40%	77.80%	77.30%	77.30%	75.10%	75.20%	74.90%
Medicaid Enrollment: Percent of Medicaid enrollees with BOE - Blind/Disabled							
Full Benefit	42.70%	43.40%	43.80%	43.50%	43.60%	44.10%	44.00%
Partial Benefit	33.40%	34.30%	35.80%	37.00%	37.90%	38.00%	37.70%
Medicare Only	.	.	.	.	.	.	.
Medicaid Only	89.90%	90.20%	90.10%	90.90%	89.80%	90.00%	89.80%

E. Disease Variables

Variation in medical service use and spending may be due, at least in part, to state-level differences in the prevalence of particular diseases (or combinations of diseases). The MMLEADS PUF contains information about the proportion of the population that had each of the CCW's 27 pre-defined chronic conditions (which are listed in Table 3), and any of behavioral, mental health, and developmental disorders that CMS's Medicare-Medicaid Coordination Office (MMCO) has found are prevalent among dual Medicare-Medicaid enrollees (which are listed in Table 4). The MMCO conditions include mental health and tobacco use conditions, developmental disorder and disability-related conditions, and other chronic physical and behavioral health conditions which were developed specifically to enhance research of the Medicare-Medicaid population.

Table 3. The CCW's 27 Original Chronic Conditions

- Acquired hypothyroidism
- Acute myocardial infarction
- Alzheimer's disease
- Alzheimer's disease, related disorders, or senile dementia
- Anemia
- Asthma
- Atrial fibrillation
- Benign prostatic hyperplasia*
- Cancer, colorectal
- Cancer, endometrial*
- Cancer, female breast*
- Cancer, lung
- Cancer, prostate*
- Cataract
- Chronic kidney disease
- Chronic obstructive pulmonary disease & bronchiectasis
- Depression (including bipolar episodes)
- Diabetes
- Glaucoma
- Heart failure
- Hip / pelvic fracture
- Hyperlipidemia
- Hypertension
- Ischemic heart disease
- Osteoporosis
- Rheumatoid arthritis / osteoarthritis
- Stroke / transient ischemic attack

* For these conditions, a gender-specific denominator is used (either Number of Females with FFS or Number of Males with FFS).

Table 4. The MMCO's Other Chronic or Potentially Disabling Conditions

- Alcohol use disorders
- Anxiety disorders
- Autism spectrum disorders
- ADHD, conduct disorders and hyperkinetic syndrome
- Bipolar disorders
- Blindness and visual impairment
- Cerebral palsy
- Cystic fibrosis and other metabolic developmental disorders
- Deafness and hearing impairment
- Drug use disorders
- Major depressive disorders
- Epilepsy
- Fibromyalgia, chronic pain, and chronic fatigue
- HIV/AIDS
- Intellectual disabilities and related conditions
- Viral hepatitis (general)
- Specific categories of hepatitis:
  - hepatitis a,
  - hepatitis b (acute or unspecified) ,
  - hepatitis b (chronic),
  - hepatitis c (acute),
  - hepatitis c (unspecified),
  - hepatitis d,
  - hepatitis e
- Learning disabilities and other developmental delays
- Leukemia and lymphoma
- Liver disease, cirrhosis, and other liver conditions (excluding hepatitis)
- Migraine and other chronic headaches
- Mobility impairments
- Multiple sclerosis and transverse myelitis
- Muscular dystrophy
- Obesity
- Opioid Use Disorder (general)
  - Opioid Use Diagnosis
  - Opioid Hospitalization/ED visit
- Medication Assisted Therapy
  - Other developmental delays
- Personality disorders
- Post-traumatic stress disorders (PTSD)
- Pressure ulcers and chronic skin ulcers
- Peripheral Vascular disease
- Schizophrenia
- Schizophrenia and other psychotic disorders
- Sickle cell disease
- Spina bifida and other congenital anomalies of the nervous system
- Spinal cord injury
- Tobacco use disorders
- Traumatic brain injury and nonpsychotic mental disorders due to brain damage

The condition algorithms examine patterns of services (claims), which serve as a proxy indicating that a person is likely receiving treatment for the condition. The PUF variables indicate proportion of the population who met the criteria for the given condition as of the end of the PUF year.

Individuals are identified as having a condition using all Medicare and Medicaid claims - regardless of the state of residence during the year.

All of the disease variables are expressed as proportions. The denominator used for all of the condition proportions is the FFS population; there are four CCW condition variables where a gender-specific denominator is used – female breast cancer, endometrial cancer, prostate cancer, and benign prostatic hyperplasia. For example, if you are interested in the proportion of people with chronic kidney disease (20.3% for Full Duals nationwide in 2012), the denominator that was used is "Number of People with FFS"; however, if you are interested in prostate cancer (3.28% for Full Duals nationwide in 2012) the denominator is males – "Number of Males with FFS".

You can find more information about the condition algorithms, including the literature references and exact codes and claim types used to identify each condition, on the CCW website (https://www.ccwdata.org/web/guest/condition-categories). The conditions are not mutually exclusive, so they are best suited for measuring the overall prevalence of a particular condition within the population. At the same time, beneficiaries/enrollees can (and often do) have more than one condition, and those additional conditions can cause substantial variation in spending and utilization patterns.

F. Cost and Use Measures

In creating MMLEADS, we have used the various Medicare claim types, revenue centers, and HCPCS codes to create type of service categories. For Medicaid, we used the MSIS type of program (**MSIS_TOP**) to identify services provided via waivers, and the MAX type of service (**MAX_TOS**) variables to develop service categories for describing and classifying the care to create groupings called service categories. These service categories provide the basis for the use and payment summary variables that are in the MMLEADS PUF.

Caution should be used when interpreting the annual "Utilization: Medicare and Medicaid Combined" variables at the state-level for dually-enrolled populations (i.e., Full Benefit or Partial Benefit). All estimates for states with missing MAX data will be undercounts, since only the Medicare data are available.

1. Medicare and Medicaid Combined - Use Summaries

An advantage of having information that is linked from Medicare and Medicaid is that it allows for a more complete understanding of service use for the dually enrolled. In the MMLEADS PUF we include seven variables that combine information from both types of claims into annual use summaries. The seven measures are:

- Count of acute IP hospital days - the count includes all Medicare-covered days and all Medicaid paid days in the acute inpatient (IP) hospital setting (note that although a hospital stay may cross over into another calendar year - only the days that were within the calendar year of the file are counted)

- Count of acute IP admissions
- Total dollars (Medicare and Medicaid) associated with IP hospital admissions – this variable is the sum of all Medicare and Medicaid payments for IP hospital days during the calendar year
- Count of acute IP 30-day (all-cause) readmissions
- All-cause readmission rate - the number of readmissions divided by the number of admissions where the beneficiary was discharged alive
- Total number of ED visits – emergency department (ED) visits are from claims with a revenue center code 0450, 0451, 0452, 0456, or 0459 (note that not every state Medicaid agency accepts revenue center codes on their claims forms).
- Total number of ED visits per 1,000 enrollees

Other Medicare and Medicaid Use Information

The PUF also includes some summary Medicare and Medicaid use information that basically reports the proportion of the population who used particular types of services during the year. The denominator used for these variables is the total "Number of People". Note that for these summary variables, there is no corresponding payment information. These services fall into three categories:

1) "Percent with at least one Medicare or Medicaid Nursing Facility or non-facility-based long-term care service (claim or assessment)" - examines both long term care or long term supports and services (LTSS). We identified all Medicaid enrollees who received Medicaid LTSS, and all Medicare enrollees who had a claim for skilled nursing care, a long term care hospital, or an MDS assessment at any time during the year.

2) Mental health services – we identified people who received Medicare or Medicaid services at either a residential or community-based treatment center.

- "Percent with at least one Medicare or Medicaid Residential Mental Health service" – includes anyone with a Medicare claim for treatment in an inpatient psychiatric facility or a Medicaid claim with a place of service code=51 (inpatient psychiatric facility), 55 (residential substance abuse facility) or 56 (psychiatric residential treatment facility).
- "Percent with at least one Medicare or Medicaid Community Mental Health service" - includes anyone with a Medicare claim for a community mental health center, a Medicare psychiatry physician visit (a subset of physician evaluation and management claims), or a Medicaid claim with a place of service code=52 (psychiatric facility partial hospitalization), 53 (community mental health center) or 57 (non-residential substance abuse treatment facility).

2. Service Categories

The source Medicare data include the following types of service classifications, which we derive from the claims.

Medicare Service Categories

For Medicare, there are 20 categories describing the care setting and a managed care category. The service type categories, which we have ordered in terms of the type of claim we use to identify the service, are:

1) Medicare Part A (acute inpatient hospital, other inpatient hospital, etc.)
    - IP hospital (which includes only acute inpatient prospective payment or critical access hospitals [CAH])
    - Other IP hospital (e.g., Children's hospital, cancer center)
    - Other facility-based post-acute services (long term care hospitals, inpatient rehabilitation facility [IRF])
    - Skilled Nursing Facility (SNF)
    - Hospice
    - Home Health (HH)
2) Medicare Hospital Outpatient. These categories are defined using the bill type as a classification scheme, which groups services according to type of facility:
    - Hospital outpatient services (OPPS payment system) – general category (not one of the specific locations on this list)
    - Clinic services – including Rural Health Center (RHC) and Federally Qualified Health Center (FQHC)
    - Outpatient therapy services
    - Community mental health center (CMHC)
    - Services at an end stage renal disease facility (ESRD)
3) Medicare Part B non-Institutional. These categories are defined using the Berenson-Eggers Type of Service (BETOS) classification scheme, which groups services into major categories:
    - Physician evaluation and management (E&M) services
    - Procedures
    - Imaging
    - Laboratory or testing
    - Services at an ambulatory surgical center (ASC)
    - Durable medical equipment (DME)
    - Other Part B services (e.g., ambulance, enteral/parenteral nutrition, vision, hearing and speech services)
    - Part B drugs (e.g., injectables and chemotherapy)
4) Medicare Part D – prescription drugs

5) Medicare managed care (Medicare Advantage) - no specific utilization information is available; we include counts of people for whom there are Part A and/or Part B MA premium payments

These categories are listed in Table 6, along with the variable names in the file, and the algorithms are described in greater detail in Appendix C. When the classifications for Medicare and Medicaid services are similar, we present this information side by side in Table 6; however, the scope of benefits offered by the two programs is quite different.

Medicaid Service Categories

For Medicaid, one way of classifying services is to partition them into the following three categories:

1) Medicaid waiver - the number of people who used waiver-based services; unique count of people across all types of service. We counted all people with an MSIS type of program variable in the claims indicating a waiver program (i.e., the source MAX variable MSIS_TOP=6 [Home and community-based care for disabled elderly and individuals age 65 and older; 1915-d waiver] or 7 [Home and community-based care waiver services; 1915-c waiver])
2) Medicaid nonwaiver - the number of people who used non-waiver services; unique count of people across all types of service
3) Medicaid managed care – the number of people who used Medicaid managed care services.

Note: people may be counted in more than one category during the year; therefore, the sum of these 3 variables may be greater than 100%.

There are two variables for each of these three categories: one that counts of the number of people in each category, and the other that summarizes the total annual payments (e.g., variable called "Number of people who used Medicaid managed care services" and corresponding payment in a variable called "Total Medicaid managed care payments").

An alternative to the 3-category Medicaid grouping is to examine services according to the acuity or location of services using the MAX type of service (TOS) code. For Medicaid, we created 17 categories (plus the managed care category listed above) each of which has two variables - a count of users and all associated payments:

1) Acute inpatient hospitalization
2) Long term care – institutional or facility-based
    - Intermediate care facility
    - Nursing facility
3) Long-term care – non-institution-based
    - Hospice
    - Home health

- Personal care services
- Targeted case management
- Transportation services

4) Outpatient hospital or clinic services
   - Hospital outpatient
   - Clinic
   - Mental health services (note – these may be either hospital or community-based)
5) Other ambulatory services
   - Physician services
   - Laboratory tests or imaging
   - Durable medical equipment
   - Dental services
   - Other practitioner treatment or other services,
6) Drugs, which are not included in the per diem payments for facility care
7) Managed care– which means we don't have information regarding specific service use and associated payments

These categories are listed in Table 6, along with the variable names in the file, and the algorithms are described in greater detail in Appendix C.

Other Medicaid Use Information

The PUF also includes three summary Medicaid use variables that basically report the proportion of the Medicaid population who used particular types of Medicaid services during the year. The denominator for these three measures is the "Number of People with FFS". Note that for these summary variables, there is no corresponding payment information. These services fall into two categories:

1) Home and community-based service waivers (HCBS)– we identified all Medicaid enrollees who were receiving Medicaid long term supports and services (LTSS) and were enrolled in a section 1915 waiver, or a 1115 waiver for health insurance and flexibility and accountability, pharmacy, family planning, or disaster-related at any time during the year.

- "Percent of Medicaid FFS enrollees ***with*** Home and Community Based Services waiver payments"
- "Percent of Medicaid FFS enrollees ***without*** Home and Community Based Services waiver payments"

Note: these two categories are not mutually exclusive since a person can be in both categories during the year; therefore, the sum of these 2 variables may be greater than 100%.

2) "Percent with Medicaid non-facility based long-term care services (home health or personal care services)" - includes anyone with a Medicaid MSIS type of program code of 6 (home and community-based 1915-d waiver), 7 (home and community-based 1915-c waiver), 13 (home health), or 30 (personal care services).

3. Utilization Summaries

For the MMLEADS PUF, we aggregate the person-level information regarding annual use of services and roll it up into utilization summary variables. For each of the utilization summaries (which is basically a count of unique people who used the type of service during the year), there is a corresponding payment summary. The relationship between the service categories and the utilization and payment summaries is illustrated in Table 6.

Services can be specific to Medicare, Medicaid, or combination of Medicare/Medicaid. For each type of service, there is a count of the number of people who used the service (i.e., these variables are user counts). The service counts are for all enrollees regardless of their length of time with FFS coverage. Determining a *per capita* rate of service use requires you to know the number with FFS coverage (either Medicare, Medicaid, or both). Except for the categories that specifically count managed care enrollees – the numbers reflect services used by people enrolled in FFS. That means the denominator is either "Number of People with FFS" (if numerator is a combined Medicare/Medicaid utilization metric, such as "Count of Acute IP Hospital Days - Medicare and Medicaid combined"), or you must calculate the denominator for Medicaid FFS or Medicaid FFS. You would take the "Number of People" multiplied by either the "Percent with all 12 months in FFS Medicaid" or "Percent with all 12 months in FFS Medicare ". This type of information can be helpful in determining *per capita* use of services (note: exception if for Medicare Part D – where this PUF does not include the count of Medicare Part D enrollees). Furthermore, the number of service users can be employed to calculate the *per user* cost of services (i.e., numerator is category-specific payments for the service divided by the # of service users).

For example, if you are interested in physician services paid by Medicaid, perhaps you'd like to know what proportion of enrollees who had a physician visit. Take the "Number of people who used Medicaid physician services" (in 2010 for nationwide Full duals this was 4,324, 778; see Table 5) and calculate a Medicaid FFS denominator (i.e., divide by the "Number of People" [7,193,106 times" Percent with all 12 months in FFS Medicaid" [60.80%], for a denominator of 4,373,408) to obtain per capita Medicaid physician use (98.9%) had at least one service in 2010).

Note: when calculating a denominator for Medicare FFS by extrapolating from the "Number of People", the number will reflect the count of beneficiaries with *both* Medicare Part A *and* Part B coverage for the full 12 months. Whereas the numerator counted any beneficiary with a service regardless of how long they were enrolled in FFS.

To obtain per user cost of the services, take the "Total Medicaid physician payments" ($1,068,624,174.00 in 2010) divided by the "Number of people who used Medicaid physician services" (average of $247.09 per user).

Table 5. Example - Service Users

State	Number of People by Medicare-Medicaid Enrollment Type	Number of People	Number of People with FFS	Percent with all 12 months in FFS Medicaid	Number of FFS people who used Medicaid physician services	Total Medicaid physician FFS payments
National	Full Benefit	7,193,106	6,454,652	60.80%	4,324,778	$1,068,624,174.00
National	Partial Benefit	2,465,834	2,444,413	97.60%	600,785	$172,500,984.00
National	Medicare Only	40,430,007	27,186,475	.	.	.
National	Medicaid Only	6,016,138	2,391,176	39.70%	3,808,874	$3,210,287,654.00

4. Payment Summaries

In the MMLEADS PUF, we aggregate the person-level information regarding annual FFS claims payments for each type of service, and roll it up into payment summary variables. The payment summaries (and associated utilization variables) are listed in Table 6.

For each variable that displays Medicare payments, the dollars are the annual total of all of the actual Medicare-paid amounts for each FFS claim for each type of service. The beneficiary share of payments is not included (i.e., variables do not contain total provider payments which may also include a beneficiary deductible or coinsurance payment – or a third party payment).

Note: for beneficiaries enrolled in Medicare managed care, we include premiums for Medicare Part A and Part B. All utilization and payment information is available for Medicare Part D, whether the beneficiary is enrolled in managed care or not; therefore we do not include information regarding Part D premiums. Medicare MA enrollees may have Medicare D payment and use represented in this PUF (caution: there is not a count of Medicare Part D enrollees in the data file; therefore, per capita use and per capita spending for Part D are not able to be calculated).

Similarly, the Medicaid payment variables include only the Medicaid portion of payments for all services; for the managed care service category – this includes premiums to third parties for capitated care.

The PUF includes the total FFS payments for Medicaid across all service categories except managed care called "Total Medicaid FFS payments" (refer to Table 6). A second variable, the "Total Medicare payments" represents the total Medicare program payment including Medicare Managed Care Part A and Part B premiums.

To obtain total Medicaid program payments for the year, take the sum of two variables:

- Total Medicaid FFS payments + Total Medicaid managed care payments = Total Medicaid payments.

Table 6. Utilization and Payment Summary Variables

Medicare service categories		**Medicaid service categories**	
User Counts	Medicare Payments	User Counts	Medicaid Payments
n/a	**TOTAL Medicare payments**	n/a	**TOTAL Medicaid FFS payments**
Acute hospital inpatient			
Number of people who used Medicare IP Hospital services	Total Medicare IP Hospital payments	Number of people who used Medicaid IP Hospital services	Total Medicaid IP Hospital payments
Number of people who used Medicare Other IP Hospital services (Children's hospital, cancer center)	Total Medicare Other IP Hospital payments		
Number of people who used Medicare Other facility-based post-acute care services (IRF, LTC hospital)	Total Medicare Other post-acute care payments		
Long term care – institutional or facility-based			
		Number of people who used Medicaid mental health services*	Total Medicaid mental health payments
		Number of people who used Medicaid intermediate care facility services	Total Medicaid intermediate care facility payments
Number of people who used Medicare SNF services	Total Medicare SNF payments	Number of people who used Medicaid nursing facility services	Total Medicaid nursing facility payments
Long-term care – non-institution-based			
Number of people who used Medicare home health services	Total Medicare home health payments	Number of people who used Medicaid home health services	Total Medicaid home health payments
Number of people who used Medicare hospice services	Total Medicare hospice payments	Number of people who used Medicaid hospice services	Total Medicaid hospice payments
		Number of people who used Medicaid personal care services	Total Medicaid personal care payments
		Number of people who used Medicaid targeted case management services	Total Medicaid targeted case management payments
		Number of people who used Medicaid transportation services	Total Medicaid transportation service payments

Medicare service categories		Medicaid service categories	
User Counts	Medicare Payments	User Counts	Medicaid Payments
Hospital Outpatient			
Number of people who used Medicare hospital outpatient services	Total Medicare hospital outpatient payments	Number of people who used Medicaid hospital outpatient services	Total Medicaid hospital outpatient payments
Number of people who used Medicare ESRD facility services	Total Medicare ESRD facility payments		
Number of people who used Medicare RHC/FQHC clinic services	Total Medicare RHC/FQHC clinic payments	Number of people who used Medicaid clinic services	Total Medicaid clinic payments
Number of people who used Medicare outpatient therapy services	Total Medicare outpatient therapy payments		
Number of people who used Medicare Community Mental Health Clinic services	Total Medicare Community Mental Health Clinic payments		
Other Ambulatory services			
Number of people who used Medicare ambulatory surgical center services	Total Medicare ambulatory surgical center payments		
Number of people who used Medicare physician evaluation & management services	Total Medicare physician evaluation & management payments	Number of people who used Medicaid physician services	Total Medicaid physician payments
Number of people who used Medicare procedures	Total Medicare procedure payments		
Number of people who used Medicare imaging services	Total Medicare imaging payments	Number of people who used Medicaid lab/xray services	Total Medicaid lab/xray payments
Number of people who used Medicare laboratory/testing services	Total Medicare laboratory/testing payments		
Number of people who used Medicare durable medical equipment	Total Medicare durable medical equipment payments	Number of people who used Medicaid durable medical equipment services	Total Medicaid durable medical equipment payments

Medicare service categories		Medicaid service categories	
User Counts	Medicare Payments	User Counts	Medicaid Payments
Number of people who used Medicare Other Part B services (ambulance, etc.)	Total Medicare Other Part B payments		
		Number of people who used Medicaid dental services	Total Medicaid dental payments
		Number of people who used Medicaid other services (all other TOS - other practitioners, other therapies, etc.)	Total Medicaid other service payments
Drugs			
Number of people who used Medicare Part B drugs	Total Medicare Part B drug payments	Number of people who used Medicaid drugs	Total Medicaid drug payments
Number of people who used Medicare Part D prescription drugs	Total Medicare Part D prescription drug costs (total RX cost)		
Managed Care			
Number of people who were enrolled in Medicare managed care Part A or Part B	Total Medicare managed care Part A premium payments	Number of people who used Medicaid managed care services	Total Medicaid managed care payments
	Total Medicare managed care Part B premium payments		

III. Appendixes

A. Acronyms

The following is a list of abbreviations and acronyms used in this document and/or the PUF data file.

ACA	Affordable Health Care Act (established the FCHCO)
ADHD	Attention deficit hyperactive disorder
BOE	Medicaid – Basis of Eligibility
CCW	Chronic Conditions Data Warehouse
CMS	Centers for Medicare and Medicaid Services
ED	Emergency Department (or emergency room)
ESRD	End stage renal disease
FCHCO	Federal Coordinated Health Care Office (synonymous with MMCO but only relevant in ACA)
FFS	Fee-for-service
FQHC	Federally Qualified Health Center
HCBS	Home and Community Based Services waiver
HIV/AIDS	Human immunodeficiency virus or acquired immunodeficiency syndrome
IRF	Institutional rehabilitation facility
IP	Inpatient (hospital)
LTC	Long term care
LTSS	(Medicaid) long term supports and services
MA	Medicare Advantage (or MA-PD, Medicare Advantage with Prescription Drug Coverage)
MAS	Medicaid – Maintenance Assistance Status
MAX	Medicaid Analytic eXtract (research database developed from MSIS)
MDS	Minimum Data Set
MM	Two digit placeholder on variable names to indicate the two digit numerical month code
MMA	Medicare Modernization Act
MMCO	(CMS) Medicare-Medicaid Coordination Office (renamed from FCHCO)
MME	Medicare Medicaid Enrollee type (e.g., Full benefit, Partial benefit, Medicare-only, Medicaid only with disability)
MMLEADS	Medicare-Medicaid Linked Enrollee Analytic Data Source
MSIS	Medicaid Statistical Information System
PUF	Public Use File
QI	(Medicare-Medicaid) qualifying individuals (type of Medicare-Medicaid enrollee)
QMB	Qualified Medicare beneficiary (type of Medicare-Medicaid enrollee)
QWDI	(Medicare-Medicaid) qualified working disabled individuals
RHC	Rural Health Clinic
RX	Prescription drug
SLMB	Specified Low-Income Medicare Beneficiary (type of MME)
SNF	Skilled Nursing Facility
TIA	Transient ischemic attack
TOS	(Medicaid) type of service

B. MME Type

To create variables in the MMLEADS, we used an algorithm from CMS to assign each person in the files an MME classification for the purposes of calculating population statistics. A combination of three variables from the Medicare and Medicaid source data are used for these determinations:

1. The state-reported monthly Medicare-Medicaid Enrollee Eligibility Type variable is submitted to CMS monthly. This variable is available to researchers in the CCW Medicare Master Beneficiary Summary File (i.e., CCW MBSF variable name is DUAL_STUS_CD_01 - DUAL_STUS_CD_12; also referred to as DUAL_STUS_CD_*MM*).
2. Monthly Medicare buy-in variables (i.e., BENE_MDCR_ENTLMT_BUYIN_IND_01 - BENE_MDCR_ENTLMT_BUYIN_IND_12; also referred to as BENE_MDCR_ENTLMT_BUYIN_*MM*) available to researchers in the CCW Medicare Master Beneficiary Summary File are used to identify Medicare-only beneficiaries.
3. The monthly MAX uniform eligibility code variables (i.e., MAX_ELG_CD_MO_1 - MAX_ELG_CD_MO_12; also referred to as MAX_ELG_CD_*MM*) from the MAX PS File are used to identify Medicaid-only individuals with disability.

For the MMLEADS, a determination is made each month regarding the level of benefits. From the monthly MME classification variables, we assign a single annual MME value. The following hierarchy is used: 1) all enrollees with one or more months of Full, QMB-only or partial dual coverage are classified as dually enrolled; 2) if there are no months of dual coverage, then the enrollee is either Medicare only or Medicaid only with disability; 3) then, for the enrollees with at least one month of QMB-only or Partial dual, the type of dual classification (Full versus QMB-only or partial) for this annual MME data element is assigned according to the most recent dual month of the year.

Table 7. Medicare and Medicaid Eligibility (MME) Classifications

MME Classifications	Algorithm
1. Medicaid – with Disability *non-dual*	Medicaid covered and blind or with disability (MAX Uniform Eligibility Code = 12 (blind/disabled, cash), 22 (blind/disabled, medically needy), 32 (blind/disabled, poverty), 42 (other blind/disabled), 3A (breast and cervical cancer prevention act) or 52 (disabled, section 1115 demonstration expansion) with no dual eligibility (i.e., not in categories 3-5)
2. Medicare-only (in Medicare data file) *non-dual*	Medicare-only if Medicare eligible (i.e., any month where the BUYIN variable is not '0' or null) and not dually eligible (i.e., not in categories 3-5)
3. Partial or QMB-only Dual	DUAL_STUS_CD_*MM* = '03','05','06' or '01'
4. Full Dual	DUAL_STUS_CD_*MM* = '02','04','08'

The Medicare-Medicaid dually enrolled individuals are identified using the monthly state-reported dual status codes from the Medicare data in the CCW MBSF. This means that, for Medicare-Medicaid enrollees, we are able to make this determination even if we are missing MAX PS for a state. Individuals identified as Medicaid – Disabled, are identified using the MAX PS.

In general, beneficiaries with any level of Medicare-Medicaid dual eligibility (i.e., full, QMB-only, or partial) could have service utilization and payment (spending) information in both the Medicare and Medicaid Service-Level files.

C. Service Category Descriptions

The algorithms for the service categories are specified in the tables below. Table 8 describes the algorithms for Medicare services and Table 9 describes the algorithms for Medicaid services.

Table 8. Medicare service algorithms

Medicare service algorithms	
Category	Algorithm
Medicare Part A	
Medicare IP Hospital	Claim type = 60 or 61; 3rd and 4th digits of provider number = 0x or 13
Medicare Other IP Hospital	all claim type = 60, 61 not in one of the other 2 groupings
Medicare Other post-acute care	Claim type = 60 or 61; 3rd and 4th digits of provider number = 40,41,42,43,44, or 3rd digit = M or S
Medicare SNF	Claim type = 20 or 30
Medicare hospice	Claim type = 50
Medicare home health	Claim type = 10
Medicare hospital outpatient	
Medicare hospital outpatient	all other claim type 40, not in another category
Medicare RHC/FQHC clinic	Claim type = 40 and bill type = 71,73, or 77
Medicare ESRD facility	Claim type = 40 and bill type = 72
Medicare Community Mental Health Center	Claim type = 40 and bill type = 76
Medicare outpatient therapy	Claim type = 40 and bill type = 74 or 75
Medicare Part B non-institutional	
Medicare physician evaluation & management	Claim types 71,72, 81, 82 and 1st digit of BETOS_CD = M
Medicare ambulatory surgical center	NCH_CLM_TYPE_CD= 71 or 72 and LINE_CMS_TYPE_SRVC_CD=F

Medicare service algorithms	
Category	Algorithm
Medicare procedure	NCH_CLM_TYPE_CD= 71 or 72 and 1st 2 digits of BETOS_CD =P0
Medicare imaging	Claim types 71,72, 81, 82 and 1st digit of BETOS_CD = I
Medicare laboratory/testing	NCH_CLM_TYPE_CD= 71 or 72 and 1st digit of BETOS_CD =T
Medicare durable medical equipment	Claim types 71,72, 81, 82 and 1st digit of BETOS_CD = D
Medicare Part B drug	Claim types 71,72, 81, 82 and BETOS_CD=O1C, O1D, O1E or O1G
Medicare Other Part B	all other claims from claim type 71,72,81,82
Medicare Part D prescription drug	
Medicare Part D prescription drug	PDE Data file
Medicare Managed care	
Medicare managed care Part A	Monthly premium information from the CMS Enrollment Database
Medicare managed care Part B	Monthly premium information from the CMS Enrollment Database

Table 9. Medicaid service algorithms

Medicaid service algorithms	
Category	Algorithm
Medicaid Acute Inpatient Hospital	
Medicaid IP Hospital	MAX type of service (TOS)=01
Medicaid long-term care: institutional or facility-based	
Medicaid mental health	TOS=02, 04,53*
Medicaid intermediate care facility	TOS=05
Medicaid nursing facility	TOS=07
Medicaid Long-term care: non-institution -based	
Medicaid home health	TOS=13
Medicaid hospice	TOS=35
Medicaid personal care	TOS=30
Medicaid targeted case management	TOS=31

Medicaid service algorithms	
Category	Algorithm
Medicaid transportation service	TOS=26
Medicaid Outpatient hospital or clinic services	
Medicaid hospital outpatient	TOS=11
Medicaid clinic	TOS=12
Medicaid Other ambulatory services	
Medicaid physician	TOS=08
Medicaid lab/xray	TOS=15
Medicaid durable medical equipment	TOS=51
Medicaid dental	TOS=09
Medicaid - other services	TOS 10 - Other practitioners 19 - Other services 24 - Sterilizations 25 - Abortions 33 - Rehabilitative services 34 - PT, OT, Speech, Hearing services 36 - Nurse midwife services 37 - Nurse practitioner services 38 - Private duty nursing 52 - Residential care 54 - Adult day care 99 - Unknown
Medicaid drugs	
Medicaid drug	TOS=16
Medicaid Managed care	
Medicaid managed care	(TOS=20,21,22)

***** First two TOS codes are facility-based services, the third is community-based.