**4 February 2016**

Case Management (CM)

for the

MHS Data Repository (MDR)

(Version 2.00.03)

Future Specification

**Revision History**

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| --- | --- | --- | --- | --- |
| **Version** | **Date** | **Para/Tbl/Fig** | **Originator** | **Description of Change** |
| 1.01.00 | 07/28/2008 | * Appendices C & F * Entire document | W. Funk | * Modified the DRG and MS-DRG grouper input and output layouts. * Changed EI/DS references to DHSS. |
| 1.02.00 | 04/30/2010 | * Entire document | C. Kangas | * Some label changes * Clarification of file contents |
| 1.03.00 | 11/19/2010 | * Table 2 * IV | A. Crouter | * Some format changes * CPT filter changed to include all CPT fields |
| 2.00.00 | 07/20/2011 | * Entire document * IV * IIV * Table 3 | A. Crouter | * Changed SADR references to CAPER * Modified text and tables to match CAPER field names * Added additional fields to CM interim file * Added footnote regarding Diagnosis Extender |
| 2.00.01 | 02/15/2012 | * Section III | J. MacLeod | * Removed reference to a SAS format being produced from the CM data. |
| 2.00.02 | 2/3/2014 | * Section IV | W. Funk | * Added P to a branch of service |
| 2.00.03 | 2/4/2016 | * Section IV: | L. Hopkins | * Added ICD-10 Codes * Add Provider Specialty Requirement * Changed SADR references to CAPER * Added FCG2 to receiving filters |

# MDR Case Management File

1. Source:

The source system is the MDR Comprehensive Ambulatory/Provider Encounter Redcord (CAPER).

1. Transmission (Format and Frequency)

The MDR Case Management (CM) File is prepared from the MDR CAPER. There is no data feed.

1. Organization and Batching

There is one SAS Data Set representing all CM episodes captured in the MDR CAPER file. Each update of the CM File is a full refresh from CAPER; it is not an update process. Although the MDR CAPER file is separated by fiscal years, this extract file contains all records for FY08 forward in a single file. The CM dataset is located in the MDR at /mdr/pub/casemgmt/cm.sas7bdat.

1. Receiving Filters

Only CAPERs meeting a combination of the following criteria are included in the CM File:

* Diagnosis code (DX1) is V49.89[[1]](#footnote-1) (through FY15) or DOD0301, DOD0302, or DOD0303 (FY16 forward)
* DoD Diagnosis Extender code (DXEXT1) is 2,3,or 4
* MEPRS code is FAZ2, ELAN, or ELA2, FCG2
* Treatment DMISID Military Service (derived) is A, F, N, or P
* At least one procedure code (CPT\_4-13) is G9002, G9005, G9009, G9010, or G9011
* Provider Specialty, Appointment is 613 or 714

1. Case Definition – Record Development

Each record in the MDR CM file represents a case “episode” for a patient by an MTF. To prepare the MDR CM file, an interim file is generated that pulls only the CAPERs that meet the criteria in section IV and containing only the data elements needed for preparing the final CM file. The layout of this interim file is contained in Appendix A. This interim file is currently developed as part of the CM processor, but could easily be implemented as a part of the raw CAPER processor. The interim file could then be picked up and used whenever the CM file is processed (generally upon completion of CAPER processing).

The basic approach to preparing and maintaining the MDR CM file is to use the interim file to collect CM CAPER records for a patient and to aggregate the resulting records into individual cases. To build these cases, it is critical to understand how CM CAPERs are coded. The UBU coding guidelines can be found in Appendix E on the BEA website located here: [link to http://www.tricare.mil/ocfo/bea/ubu/coding\_guidelines.cfm](http://www.tricare.mil/ocfo/bea/ubu/coding_guidelines.cfm). The processor handles CM CAPERs that are not coded correctly according to the extent of the miscoding; some bad records may be dropped entirely from consideration in the logic to develop cases. The most important coding guidelines (as they pertain to this processor) can be summarized as follows:

* CM services will be reported monthly, between the 1st and 5th business day of the month.
* The first time a new patient is seen by a new case manager; code V49.89\_2 (through FY15) or DOD0301 (FY16 forward) (**Start**), ~~E&M 99499~~, and the appropriate “G” procedure code to represent the acuity.
* For each subsequent reporting period for that patient and case manager, code V49.89\_3 (through FY15) or DOD0302 (FY16 forward) (**Continue**), ~~E&M 99499~~, and the appropriate “G” acuity procedure code.
* When the patient will end management with the current case manager, code V49.89\_4 (through FY15) or DOD0303 (FY16 forward) (**End**), E&M 99499, and the appropriate “G” acuity procedure code.
* If a patient returns after services are ended, simply begin the reporting process again by using the start code V49.89\_2 (through FY15) or DOD0301 (FY16 forward).

A constraint that the processor enforces on the CM CAPERs is that each case must be unique to the patient and the MTF. For example, if multiple CM CAPERs are present for the same patient but from two different MTFs, then the processor splits this scenario into two separate cases even if they occur around the same timeframe. This leaves open the possibility that a single patient can have concurrent, overlapping cases across different MTF locations in the MDR CM file.

An important and inherent dimension involved with CM is time; the processor takes into account the date of the encounter (Encounter Date) recorded on the CAPERs as well as the timing of when the CAPER is actually extracted (Extract Date) in its decision logic. For example, if multiple CM CAPERs are present for a patient at a single MTF and within a certain time window (roughly 3 months), the processor combines those records into the same case. CM encounters that occur more than 3 months apart, even if for the same patient and at the same facility, will be counted as separate case records.

A final example to consider is that if multiple CM CAPERs are present for a patient at a single MTF, but contain different provider information, the processor combines the records into the same case and the providers involved in the case from the most recent CAPER are kept in the Provider ID 1 – Provider ID 3 fields.

As evidenced by these examples, the SAS processing logic needed to create the case records is complex. Please refer to Appendix B for more detail on the decision logic that the processor uses to collapse multiple CM CAPERs into single case records.

After the CM interim file is built into cases, the resulting case records undergo routine MDR processing. This includes preparation of internally derived fields and merging to external files to create new fields. Field derivations are described in Table 2 in the file layout section VII below.

1. External File Merges

Table 1 describes each reference (or data) file being used to append fields to each case record. The basis upon which the case record should be merged to the reference (or data) files is also described.

**Table 1: External Reference File Merges**

| **Merge** | **Date Matching** | **Additional Matching** |
| --- | --- | --- |
| Longitudinal VM4 File | Processing Date of case if patient is currently being managed; otherwise, use end date of case. | EDI\_PN |
| DMISID | FY of last encounter date for the case, FY of MDR DMISID SAS format file. | Application based on enrollment DMISID and catchment area DMISID |
| Omni-CAD | FY/FM of last encounter date for the case and FY/FM of MDR Omni CAD format file. | Patient zip code & sponsor service aggregate |
| Master Death File |  | EDIPN |

1. File Layout

The MDR CM File is stored in a SAS dataset. Table 2 describes the structure of the SAS Dataset, and indicates processing rules.

**Table 2: SAS Data Set Structure and Processing Rules**

| **Data Element Name** | **Format** | **SAS Name in MDR File** | **CAPER Source Data Element** | **Transformation Rule** |
| --- | --- | --- | --- | --- |
| Unique Person Identifier | $10 | edi\_pn | edipn | No transformation |
| Treatment DMISID | $4 | dmisid | dmisid | No transformation. Derive according to logic in Appendix B. |
| Acuity Level | $1 | acuity | N/A | Derive according to coding guidelines. |
| Provider ID 1 | $9 | cm\_id | provid1 | No transformation. Derive according to logic in Appendix B. |
| Provider ID 2 | $9 | cm2\_id | provid2 | No transformation. Derive according to logic in Appendix B. |
| Provider ID 3 | $9 | cm3\_id | provid3 | No transformation. Derive according to logic in Appendix B. |
| Case Begin Date | YYYYMMDD | begdate | encdate | No transformation. Derive according to logic in Appendix B. |
| Case End Date | YYYYMMDD | enddate | encdate | No transformation. Derive according to logic in Appendix B. |
| Last Encounter Date | YYYYMMDD | last\_encdt | encdate | Set to the encounter date of the most recent CAPER contributing to the case. |
| Last Activity Date | YYYYMMDD | txdate | extrdate | Set to the transmission date of the most recent CAPER contributing to the case. |
| Extract Date | $7 | extrdt | N/A | Set to the date of the case management file extract date. |
| Fiscal Year | $4 | fy | fy | No transformation. This is the FY of the last encounter date of the case. |
| Patient DOB | YYYYMMDD | patdob | patdob | No transformation. |
| Patient Gender | $1 | patsex | patsex | No transformation. |
| Sponsor SSN | $9 | sponssn | sponssn | No transformation. |
| Good Standing Flag | $1 | gs | N/A | Derive according to logic in Appendix C. |
| **Fields derived from merge to LVM4** | | | | |
| DEERS Sponsor Service Aggregate | $1 | dsponsvc | N/A | Fill with DEERS sponsor service (aggregate) from LVM-4, if the last encounter date is between the begin and end date associated with the DEERS sponsor service (aggregate). |
| DEERS Enrollment Site | $4 | denrsite | N/A | Fill with enrollment DMISID from LVM-4, if the last encounter date is between the begin and end date associated with the enrollment site. |
| DEERS Alternate Care Value | $1 | acv | N/A | Fill with ACV from LVM-4, if the last encounter date is between the begin and end date associated with the ACV |
| DEERS Beneficiary Category | $3 | bencat | N/A | Fill with DEERS beneficiary category from LVM-4, if the last encounter date is between the begin and end date associated with the DEERS beneficiary category. |
| DEERS Privilege Code | $1 | privcode | N/A | Fill with DEERS privilege code from LVM-4, if the last encounter date is between the begin and end date associated with the DEERS privilege code. |
| DEERS Zip Code | $5 | deerszip | N/A | Fill with DEERS zip code from LVM-4, if the last encounter date is between the begin and end date associated with the DEERS zip code. |
| **Fields derived from merge to DMISID Table** | | | | |
| Enrollment Site Service | $1 | enrsvc | N/A | UBU\_SVC |
| Enrollment Site MSMA | $3 | enrmsma | N/A |  |
| Enrollment HSSC Region | $2 | enrhssc | N/A | HSSCREG |
| Catchment Area Service | $1 | catchsvc | N/A | UBU\_SVC |
| PRISM Area Service | $1 | prismsvc | N/A | UBU\_SVC |
| MTF Service Area Service | $1 | svcareasvc | N/A | UBU\_SVC |
| **Fields derived from merge to Omni-CAD** | | | | |
| Catchment Area ID | $4 | catch | N/A | Based on matching FY, FM and deerszip; if dsponsvc=A then set equal to ACATCH, if dsponsvc = F then set equal to FCATCH; if dsponsvc in (M, N, V) then set equal to NCATCH, otherwise set equal to OCATCH. If zip code not found in MDR Omni-CAD, set equal to ‘0999’ |
| PRISM Area ID | $4 | prism | N/A | Based on matching FY, FM and deerszip; if dsponsvc=A then set equal to APRISM, if dsponsvc = F then set equal to FPRISM; if dsponsvc in (M, N, V) then set equal to NPRISM, otherwise set equal to OPRISM. If zip code not found in MDR Omni-CAD, set equal to ‘0999’ |
| MTF Service Area | $4 | mtfsvcarea | N/A | Based on matching FY, FM and deerszip; if dsponsvc=A then set equal to ACATCH, if dsponsvc = F then set equal to FCATCH; if dsponsvc in (M, N, V) then set equal to NCATCH, otherwise set equal to OCATCH. If zip code not found in MDR Omni-CAD, set equal to ‘0999’ |
| TNEX Region | $1 | tnexreg | N/A | HSSCREG, based on matching FY, FM and deerszip |
| Traditional Region | $2 | reg | N/A | REGION, based on matching FY, FM, and deerszip |
| TPR Flag | $1 | tprflag | N/A | TPRFLAG, based on matching FY, FM and deerszip |
| **Fields derived from merge to Death File** | | | | |
| Death Code | $1 | dthcode | N/A |  |
| Death Date | $8 | dthdate | N/A |  |

**Appendix A: Description of CM Interim CAPER File**

The CM Interim CAPER file is prepared after the update process has completed at the end of CAPER processing. The processor reads in the current MDR CAPER file, extracting the required records and data elements, and writes out to a separate file. It would likely be more efficient for the preparation of this file to occur as a part of routine CAPER processing, while the final MDR PUB CAPER is still in memory. Each interim file contains records for a fiscal year. CM Interim files span FY08 to the current fiscal year.

Records to include in the CM Interim CAPER file are described in section IV. The CM Interim File is stored in a SAS dataset, according to Table 3.

**Table 3: Data Elements in CM Interim File**

| **Data Element Name** | **Format** | **CAPER Source Data Element** | **Transformation Rule** |
| --- | --- | --- | --- |
| Sponsor SSN | $9 | sponssn | No transformation |
| Person ID | $10 | edipn | No transformation |
| Patient Date of Birth | YYYYMMDD | patdob | No transformation |
| Patient Sex | $1 | patsex | No transformation |
| Procedure E&M Code 1 | $5 | cpt\_1 | No transformation |
| Procedure E&M Code 2 | $5 | cpt\_2 | No transformation |
| Procedure E&M Code 3 | $5 | cpt\_3 | No transformation |
| Procedure CPT 1 | $5 | cpt\_4 | No transformation |
| Procedure CPT 2 | $5 | cpt\_5 | No transformation |
| Procedure CPT 3 | $5 | cpt\_6 | No transformation |
| Procedure CPT 4 | $5 | cpt\_7 | No transformation |
| Procedure CPT 5 | $5 | cpt\_8 | No transformation |
| Procedure CPT 6 | $5 | cpt\_9 | No transformation |
| Procedure CPT 7 | $5 | cpt\_10 | No transformation |
| Procedure CPT 8 | $5 | cpt\_11 | No transformation |
| Procedure CPT 9 | $5 | cpt\_12 | No transformation |
| Procedure CPT 10 | $5 | cpt\_13 | No transformation |
| Encounter Date | YYYYMMDD | encdate | No transformation |
| Disposition Code | $1 | dispcode | No transformation |
| Treatment DMISID | $4 | dmisid | No transformation |
| Treatment DMISID Service | $1 | txsvc | No transformation |
| Provider ID 1 | $9 | provid1 | No transformation |
| Provider ID 2 | $10 | provid2 | No transformation |
| Provider ID 3 | $10 | provid3 | No transformation |
| Last Activity Date | YYYYMMDD | extrdate | No transformation |
| Diagnosis 1 | $7 | dx1 | No transformation |
| Diagnosis 2 | $7 | dx2 | No transformation |
| Diagnosis 3 | $7 | dx3 | No transformation |
| Diagnosis 4 | $7 | dx4 | No transformation |
| Diagnosis 5 | $7 | dx5 | No transformation |
| Diagnosis 6 | $7 | dx6 | No transformation |
| Diagnosis 7 | $7 | dx7 | No transformation |
| Diagnosis 8 | $7 | dx8 | No transformation |
| Diagnosis 9 | $7 | dx9 | No transformation |
| Diagnosis 10 | $7 | dx10 | No transformation |
| DX1 DoD Extender | $1 | dxext1 | No transformation |
| DX2 DoD Extender | $1 | dxext2 | No transformation |
| DX3 DoD Extender | $1 | dxext3 | No transformation |
| DX4 DoD Extender | $1 | dxext4 | No transformation |
| DX5 DoD Extender | $1 | dxext5 | No transformation |
| DX6 DoD Extender | $1 | dxext6 | No transformation |
| DX7 DoD Extender | $1 | dxext7 | No transformation |
| DX8 DoD Extender | $1 | dxext8 | No transformation |
| DX9 DoD Extender | $1 | dxext9 | No transformation |
| DX10 DoD Extender | $1 | dxext10 | No transformation |
| ICD1 | $7 | Derived; see transformation rule | For extractions prior to July 2011, concatenate dx1 and dxext1 (prepend a space to dxext1, and remove decimal from dx1); else set equal to dx1 |
| MEPRS4 Code | $4 | meprscd | No transformation |
| Provider Specialty Code | $3 | provspec1 | No transformation |
| Secondary Provider Specialty 1 | $3 | provspec2 | No transformation |
| Secondary Provider Specialty 2 | $3 | provspec3 | No transformation |
| FY | $4 | fy | No transformation |

**Appendix B: Processing Logic to Create Cases**

The CM interim file is used as the input to the processing logic.

The following is a summary of the case episode building rules and definitions, to be used in conjunction with Table 4 below:

1. Terminology: “w/o follow-on” means no CAPER in the next two calendar months after the calendar month of the last CAPER described in the rule.
2. “First” means the earliest CAPER in the person-MTF-episode group being built.
3. “Person-MTF-episode” is the end product, an episode of CM for a specific individual at a specific MTF. (In the MDR file, a person may have overlapping episodes if two different MTFs are reporting episodes for them. In the extract for M2, a person cannot have any overlap days between episodes, regardless of MTF.)
4. Prior to the rules below, CAPERs that are harvested (that is, that fulfill the conditions of the filter[[2]](#footnote-2)) are sorted into one group for each Person ID (EDI-PN) – MTF (child DMIS ID) combination, and within the group are sorted in ascending order of encounter date, with ties broken first by “initial” before “maintenance”, with ties broken second by earliest transaction date, and with remaining ties broken using “first record read”.
5. All “G” procedure codes that pass the filter are treated alike, and are ignored for the episode-building. They simply indicate case acuity.
6. The qualifying V codes classify each CAPER as one of “initial” (initiating CM), “maintenance” (continuing CM), or “termination” (ending CM).
7. “Episode status” is “good” if the last CAPER was either termination, or was in the most recent month processed. Episode status is set each time the end-date is set. See Appendix C for more details on the derivation of the Good Standing Flag.
8. “Close episode” means that no further CAPERs are read and no further rules applied from the table that come later, and any remaining CAPERs for the Person-MTF combination are treated as a new episode, beginning at the first rule below.

**Table 4: Logic Used to Create Case Records from CAPERs**

| **Rule No.** | **Scenario** | **Logic Description** |
| --- | --- | --- |
| 1 | First CAPER is either “initial” or “maintenance” | A new episode is started with begin date of the CAPER’s encounter date, and end-date at the end of the second following month after the encounter month. |
| 2 | First CAPER is “termination”. | Record is ignored. |
| 3 | Next CAPER has date within same or next two calendar months as previous CAPER, is “initial” or “maintenance” | Replace PCM IDs with this CAPER; make end-date at the end of the second following month after the encounter month. Continue this rule with next CAPER. |
| 4 | Next CAPER has date within same or next two calendar months as previous CAPER, is “termination”. | Close episode. Replace end-date with encounter date of CAPER and change status to “Good”. Replace PCM IDs with this CAPER. |
| 5 | There is no next CAPER and current processing month is beyond episode’s end-date, or next CAPER has encounter date beyond episode’s end-date. | Close episode, with end date as last day of month of previous CAPER (if “maintenance”) or as encounter date of previous CAPER (if “initiation”). |

**Appendix C: Decision Logic to Derive the Good Standing Flag**

The MDR CM processor attempts to represent the coding accuracy of the raw CM CAPERs with the derivation of the “Good Standing Flag”. If the CAPERs for a given case have been coded in a way that completely fulfills the requirements set by the UBU coding guidelines, the case record has its Good Standing Flag is set to “Y” (yes). The data will not always arrive as expected, however. Records may be received with pieces of case episodes missing (i.e., no beginning, multiple beginning, etc.). The Good Standing Flag will provide the MDR user with an indication of whether or not a given case record has met the coding guidelines, according to the following logic:

1. A temporary field is defined called the cycle month. The cycle month is set to equal the current month that the processor is being run if the day-of-month of the processing is >= 19th; otherwise the cycle month is set to the month prior to the month of processing.
2. The Good Standing Flag is set to “Y” if any of the following conditions are met:
   1. Termination CAPER was in same calendar month as last maintenance or initiation CAPER
   2. Termination CAPER was <=19th of first month following last maintenance or initiation CAPER
   3. The case episode end-date is beyond the current cycle month AND the last CAPER encounter month is >= to the current cycle month.
3. The Good Standing Flag is automatically set to “N” if the episode did not start with an initiation CAPER.
   1. If a second CAPER is received for the case, the lack of an initiation CAPER is excused and the Good Standing field will be reset to “Y”.

**Appendix D: M2 Extraction Rules**

An additional constraint that M2 enforces on its CM file is that M2 will not accept multiple case records for the same patient with overlapping timeframes. The only scenario where this can occur in the MDR CM file is when CM CAPERs from different MTFs for the same patient are extracted and have overlapping date ranges. The MDR processor would split this type of scenario into 2 separate case records, maintaining the overlap in the case date ranges.

Once the MDR CM file has been created, the processor runs an additional step according to the following logic to create an extract to be sent to M2:

1. All MDR case records without overlapping date ranges for the same patient are extracted to M2 as is.
2. For MDR case records with overlapping date ranges for the same patient:
   1. Any non-overlapping days are sent as part of their episode.
   2. Any overlapping days go with the Good Standing = “Y” episode if there is only one.
   3. If more than one episode has Good Standing = “Y” (or none do), tie-breaker between them is latest episode starting date wins. If that too ties, then lowest DMIS ID wins.

1. CAPER apub data extractions prior to July, 2011 include the Diagnosis Extender field. It is expected that extractions subsequent to July, 2011 (for all Fiscal Years) will not. For subsequent extractions, the Diagnosis Extender is appended to the end of the Diagnosis field, preceded by a space. [↑](#footnote-ref-1)
2. These conditions include a valid person ID, valid “G” HCPCS for case management, and valid “V” diagnosis for classifying stage of case management. (There are other filters that have no effect on episode building, such as provider specialty codes and E&M code.) [↑](#footnote-ref-2)