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Direct Care Completion Factors

for the MHS Mart (M2)

(Version 1.00.00)

Current Specification

**Revision History**

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| --- | --- | --- | --- | --- |
| **Version** | **Date** | **Para/Tbl/Fig** | **Originator** | **Description of Change** |
| 1.00.00 | 07/02/2007 | * Whole document
 | K. Hutchinson | * Initial versioning.
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Direct Care Completion Factors for the MHS Mart (M2)

1. File Format: The Direct Care Completion Factors are provided as two tables of slightly different format, one each for SADR and SIDR completion factors. Even though the SADR tables themselves are by fiscal year, the SADR Completion Factor table contains all years.
2. Periodicity: The Direct Care Completion Factors Table will be updated on an as needed basis. This is usually monthly for the current year, and less often for previous years. The actual timing is dependent on the refreshing of the encounter data and processing of the worldwide workload report (WWR). The factors cannot be calculated for a month until both the encounter data and the WWR have been processed.
3. Record Selection: Completion factors are only calculated for MTFs that regularly submit worldwide workload reports. Completion factors are provided only for inpatient facilities (for SIDRs) and for ambulatory clinics identified by the “B” in the first character of the MEPRs code and “FBN” MEPRS codes (for SADRs).
4. Refresh Batches: The update Direct Care Completion Factors file will contain all completion factors for all DMIS IDs with encounter data and WWR reports. The completion factor table must be refreshed on the M2 at the same time (on the same day) as a refreshing of the granular file to which it is linked. (Only the rows for the same year as the SADR refresh need to be recalculated, but the entire table including all years is provided in the refresh feed.) The table will only reflect the most current completion factors; older versions are not saved.
5. Estimation of Completion Factors:

*Completion Factors for SADRs*

1. SADRs are tabulated by month, 3-character MEPRS, and treatment DMIS ID, counting only those SADRS that pass the “HPA&E Countable Visit Algorithm” (see appendix) and which have a “B” as the first MEPRS character or are MEPRS code “FBN”.
2. Completion Factors are calculated for those month/MEPRS/DMIS ID combinations that have both a WWR visit count (total of both inpatient and outpatient visits) and a SADR tabulation count by dividing the latter by the former.
3. No completion factors are estimated for those month/MEPRS/DMIS ID combinations where the first character of the MEPRs code is not “B” or the MEPRS code is not “FBN”. (The completion factor will be zero for any B\*\* or FBN code that has a WWR count but no tabulated SADRs.)
4. For those combinations that have a tabulated SADR count but no WWR workload count, the completion factor is estimated as follows:
* The *preceding month’s* and the *estimation month’s* worldwide average completion factor is found by dividing the total number of tabulated SADRs from workcenters with WWR workload, by the total amount of WWR workload from workcenters with tabulated SADRs (for each month separately). These are labeled *AVERAGE*0 and *AVERAGE*1 in the formula below. (If there is an initial month for which there is no previous month of worldwide data, the contemporary average (*AVERAGE*1) will be used as the estimate for the combination (work center).
* The completion factor for the previous month for the combination (work center) to be estimated is retrieved or calculated. (This is labeled *PREVIOUS* in the formula below.
* The estimate is calculated by:

*ESTIMATE* = (*PREVIOUS*) \* (*AVERAGE*1)/(*AVERAGE*0)

* If an estimate is greater than 100%, 100% will be used instead.
1. All month’s more current than the WWR feed will not have estimated completion factors, but will be present in the table (see format below) filled with “0”.

*Completion Factors for SIDRs*

1. SIDRs are tabulated by month and treatment DMIS ID, counting only those SIDRS which qualify for inclusion in the M2. Generally, these SIDRs are completed records (“D records”) for care delivered at the MTF (as opposed to “absent sick” or “carded for record only”).
2. Disposition Completion Factors (Disp CFs) are calculated for those month /DMIS ID combinations that have both a WWR disposition count (if no disposition count is available, the admission count must be used) and a SIDR tabulation count by dividing the latter by the former, rounded to the 4th decimal place.

*Disp CF = SIDR dispositions / WWR dispositions*

1. For those combinations that have a tabulated SIDR count but no WWR workload count, the disposition completion factor is estimated as follows:
* The *preceding month’s* and the *estimation month’s* worldwide average disposition completion factor is found by dividing the total number of tabulated SIDRs from MTFs with WWR workload, by the total amount of WWR disposition workload from MTFs with tabulated SIDRs (for each month separately). (These are labeled *AVERAGE*0 and *AVERAGE*1 in the formula below. (If there is an initial month for which there is no previous month of worldwide data, the contemporary average (*AVERAGE*1) will be used as the estimate for the missing combination (MTF).
* The disposition completion factor for the previous month for the MTF to be estimated is retrieved or calculated. (This is labeled *PREVIOUS* in the formula below.)
* The estimate is calculated by:

*ESTIMATE* = (*PREVIOUS*) \* (*AVERAGE*1)/(*AVERAGE*0)

* If an estimate is greater than 100%, 100% will be used instead.
1. All month’s more current than the WWR feed will not have estimated completion factors, but will be present in the table (see format below) filled with “0”.
2. The final completion factor, called the Cost/Workload Completion Factor (C/W CF) is derived as follows (rounded to the 5th decimal place):

*C/W CF = Minimum(1, (0.8\*Disp CF)+(0.2\*Disp CF^2))*

1. Application of Completion Factors:The completion factors are meaningful as stand alone tables for user use, but they are also very powerful for improving the information available from direct care encounter data files. In general, these files contain only partial data because of (1) time lags in receiving data, and (2) permanent failure to complete encounter records for some encounters. Each of the main direct care encounter data files (SADR and SIDR) contain basic quantitative information based solely on that reported encounter. The completion factors allow extrapolations from the recorded encounters to estimate the total quantitative results in that view.

To accommodate this, certain quantitative fields in encounter data (costs, prices, days of stay, admission or visit counts, relative value units, relative weighted products, APG weights) are estimated to completion. This does not include measures that are either an average or a unit measure (where the quantities of records are divided into a number) or that are a characteristic of the patient (like age). The estimation for appropriate measures produces a calculated “total” for that measure by dividing the “raw” measure in the encounter record by the matched completion factor for that month, facility, and (SADRs only) work center at a 3-digit MEPRS level. This allows the “total” measures to be selected for reports and all the missing data will be estimated to completion in the resulting report. (Example: $80 “raw” cost for a visit, matched completion factor of 0.75, yields a “total” completed cost of $80/0.75 = $106.67.)

File Layout and Transformation Rules for

Direct Care Completion Factors SADR Table[[1]](#footnote-1)

| Field | M2 Element Name | Type | Source Element Name(s) | Business Rules/ Derivation |
| --- | --- | --- | --- | --- |
| 1 | Tmt DMIS ID | Char(4) | DMISID | No transformation |
| 2 | MEPRS | Char(3) | MEPRSCD | No transformation |
| 3 | Fiscal Year | Char(4) | FY | No transformation |
| 4 | Fiscal Month | Char(2) | FM | No transformation |
| 5 | Percent Complete | Dec(9,7) |  | See Description above |

File Layout and Transformation Rules for

Direct Care Completion Factors SIDR Table

| Field | M2 Element Name | Type | Source Element Name(s) | Business Rules/ Derivation |
| --- | --- | --- | --- | --- |
| 1 | Tmt DMIS ID | Char(4) | MTF | No transformation |
| 2 | Fiscal Year | Char(4) | FY | No transformation |
| 3 | Fiscal Month | Char(2) | FM | No transformation |
| 4 | C/W Completion Factor | Dec(10,5) |  | See Description above |
| 5 | Disposition Completion Factor | Dec(10,5) |  | See Description above |

APPENDIX: HPA&E Countable Visit Algorithm

The HPA&E Countable Visit Algorithm is an attempt to exclude SADRs that are likely to be of appointment types not classified as “countable” in the CHCS user-controlled table. This is helpful for estimation of the number of appointments for which there are no SADRs based on the reported number of countable visits from systems fed by CHCS (MEPRS and WWR, for example).

The algorithm counts SADRs that satisfy the following criteria:

1. The work center is designated as an ambulatory care work center (MEPRS code begins with “B”).
2. SADRs are not for no-shows or cancellations (Appointment type = 2, 7, 8, or 9) or for patients who left without being seen (Disposition type = 5)
3. If the E&M CPT Code is the value that the Uniform Biostatistical Utility (UBU) work group mandated to be used by all non-physicians (99211), then at least one of the following must be true:
* The provider specialty must be a physician.[[2]](#footnote-2)
* The clinic is a specialty clinic where the primary providers are not normally physicians.[[3]](#footnote-3)
* A significant service occurred and was reported in the E&M CPT Code.[[4]](#footnote-4)
* The clinic is a significant ambulatory procedure visit (APV) clinic.[[5]](#footnote-5)
* The clinic is an allergy clinic, and at least one of the four procedural CPT codes falls in the significant procedure ranges for allergy work.[[6]](#footnote-6)
1. If the first three characters of the MEPRS code are "FBN", the countable visit flag is "Y" regardless of any other characteristics in the SADR.
1. Applicable to FY02 SADR and backwards only. FY03 and forward utilizes the “appointment-inferred” SADR process for completion. [↑](#footnote-ref-1)
2. These are provider specialties in the following ranges: 000-073, 080-108, 110-200, 204-208, 300-400, 402-406, 500-518, 800-813, 815-816. [↑](#footnote-ref-2)
3. These are the clinics: Cast (BEB), Orthopedic Appliance (BEE), Social Work (BFE), Substance Abuse Rehab (BFF), Physical Therapy (BLA), and Occupational Therapy (BLB). [↑](#footnote-ref-3)
4. Significant CPT codes are any in the ranges 99201-99205, 99212-99215, 99217-99220, 99234-99236, 99241-99245, 99251-99255, 99261-99263, 99271-99275, 99281-99285, 99288, 99291, 99341-99354, 99371-99373, 99381-99387, 99391-99397, 99401-99404, 99411, '99412, 99420, 99429, 99450, 99455, 99456, 99499. [↑](#footnote-ref-4)
5. In all services for FY01 and backwards, these are clinics whose 4th position MEPRS code is a “5”; it also includes “7” for Army and Air Force in FY00 and FY01, and “9” for Air Force in FY00 and FY01. It is possible that some services use some other values besides “5” in FY99, but the MEPRS office had not responded by the date this was written. In all services for FY02 and forward, these are clinics whose 4th position MEPRS code is a “5” or “7”. [↑](#footnote-ref-5)
6. Significant allergy CPT codes are any in the ranges 95115, 95117, 95120, 95125, 95130-95134, 95144-95149, 95165, 95170, 95180, 95199. [↑](#footnote-ref-6)