M2 Direct Care

Laboratory Results

for the MHS Mart (M2)

(Version 1.00.09)

Future Specification

Revision History

Version	Date	Originator	Para/Tbl/Fig	Description of Change
1.00.00	04/28/2021	S. Keane		Original.
1.00.01	06/10/2021	S. Keane	Entire Document	Update based on functional feedback. Remove Certifying Provider SSN (Pseudo) and Ordering Provider SSN (Pseudo).
1.00.02	06/30/2021	S. Keane	Table 3 and Section VII	Add descriptions for HIPAA Taxonomy Codes, Enrollment Groups, and Eligibility Groups. Add Market Transition Date. Update M2 Location.
1.00.03	06/03/2024	S. Keane	Table 3	Remove Market Transition Date
1.00.04	8/01/2024	S. Keane	Entire Document	Remove Table 2. Update the layout being sent from MDR to M2.
1.00.05	8/14/2024	S. Keane	Table 3	Removed: MTF Service Area Base Market Code, MTF Service Area Expanded Market Code, MTF Service Area Reporting Market Code, MTF Service Area Type of Market Code.
1.00.06	9/10/2024	S. Keane	Table 1 and Table 2.	Add Sponsor Service and Prime Service Area. Specify Integer for Line Number. Convert Genesis Flag to 1/0. Rename Age Group Common. Remove Single quote from Result Text and Result Numeric. Remove Ordering Site Parent. Remove text "M2 Derived". Rename Table 3 to 2.
1.00.07	9/26/2024	S. Keane	Table 1 and Table 2	Remove PowerInsight Encounter ID GENESIS. Update business rules for Line Number, Number of Tests and Number of Results Maximum.
1.00.08	10/2/2024	S. Keane	Table 1	Update derivation of Result Abnormal and Result Abnormal Flag.
1.00.09	10/15/2024	S. Keane	Table 1	Move Number of Results Maximum.to end of MDR Feed.

<p style="text-align: center;">M2 Direct Care Laboratory Results</p>

I. **Source:** The most recent MDR CADRE Laboratory Enhanced Results and MDR Genesis Laboratory Results files are the sources. The MDR will merge the two source files into a single feed for M2.

II. **File Format:** Regardless of the length specified, all fields are variable length and delimited by "|".

III. **Record Selection:** Only FY2019 and forward will be sent to M2. Apply the following filter: include records where LABVALUE (CHCS CADRE) or RESULT_VALUE (MHS GENESIS) is populated. The record key is the Record ID (M2KEY) which is a sequentially assigned number, encoded to base 62 to save space, and continues across Fiscal Years.

For lab test with more than one result, the combination of the following fields will be used to distinguish individual results. Results are ordered by:

(CHCS CADRE): CHCSDMIS ACCESSNO ORDERID LABTEST RECNO

(MHS GENESIS): ENCOUNTER_SK ORDER_SK ACCESSION ORDERABLE_DISP EVENT_SK

MDR will create a Line Number (ROWNUM) for every record with this combination.

Each update will consist of full file refresh. As such, M2 shall purge/remove existing records PRIOR to loading the current/new full file refresh. The load file contains records to be added to the M2 Direct Care Laboratory Results Table. See Table 1 in Section V below.

IV. **Refresh Batches:** Batches are by Fiscal Year. The Fiscal Year is included in the feed and can be determined by the Date of Service (SERVDATE) field.
Frequency of updates:
- Current Fiscal Year: Weekly.
- Prior Fiscal Year: Semi-annually.
- All Years Prior to Prior Fiscal Year: Annually (October).

Any year refreshed in the MDR should automatically trigger a refresh of the same year's table in the MHS Mart (M2).

V. **Table 1. Full File Refresh Layout of MDR Feed to M2:** Table 1 includes all fields received or derived in the MDR that are fed to M2. Fields are listed alphabetically by M2 Object Name (after Record ID)

Obtain from M2 CADRE Lab Orders when feasible. Otherwise, obtain from specified source. Sources: CLABE = CADRE LAB Enhanced, CLABR = CADRE Lab Results, GLABO = GENESIS LAB Orders, GLABR = GENESIS LAB Results.

Table 1. MDR Feed to M2

M2 Object	Format	MDR CADRE LAB SAS Name	MDR GENESIS SAS Name	Business Rule	In M2 CADRE LAB Orders
Record ID	Char(6)	M2KEY	M2KEY	CLABE: none. GLABO: none.	YES
Accession Number	Char(20)	ACCESSNO	ACCESSION	CLABE: Set length to 20. GLABR: Set Length to 20.	YES
Age	Num(8,0)	PATAGE	PATAGE	CLABE: none. GLABR: none.	YES
Age Group Common	Char(1)	AGEGROUP	AGEGRP	CLABE: none. GLABR: none.	YES
Appointment Record ID	Char(10)	APPTNO	ENCOUNTER_SK	CHCS: Remove leading and trailing blanks. GENESIS: First 10 digits of ENCOUNTER_SK where RECORD_TYPE_FLAG = "ENCOUNTER RAD".	YES
Ben Cat Common	Char(1)	COMBEN	COMBEN_D	CLABE: none. GLABR: none.	YES
Beneficiary Category	Char(3)	BENCAT	BENCAT_D	CLABE: none. GLABR: none.	YES
Beneficiary First Name	Char(20)	EDIPN	EDIPN	CHCS and GENESIS: Join to MPI Table on UPID. Only visible in the restricted universe.	YES
Beneficiary Last Name	Char(26)	EDIPN	EDIPN	CHCS and GENESIS: Join to MPI Table on UPID. Only visible in the restricted universe.	YES
Beneficiary Name	Char(70)	EDIPN	EDIPN	CHCS and GENESIS: Join to MPI Table on UPID. Display as LAST, FIRST Middle Initial. Only visible in the restricted universe.	YES
Beneficiary Zip Code	Char(5)	PATZIP	ZIP_D	CLABE: none. GLABR: none.	YES
Certifying Provider EDIPN	Char(10)	CPEDIPN	PRSNL_COMPL_EDIPN	CLABE: none. GLABR: none. Only visible in the restricted universe.	YES
Certifying Provider HIPAA Taxonomy	Char(10)	CPHIPAA	PRSNL_COMPL_HIPAA	CLABE: none. GLABR: none.	YES
Certifying Provider Name	Char(61)	CPNAME	PRSNL_COMPL_NAME	CLABE: none. GLABR: none.	YES
Certifying Provider NPI	Char(10)	CPNPI	PRSNL_COMPL_NPI	CLABE: none. GLABR: none.	YES
Critical High GENESIS	Char(20)	N/A	CRITICAL_HIGH	CLABR: Set to Null. GLABR: none.	NO
Critical Low GENESIS	Char(20)	N/A	CRITICAL_LOW	CLABR: Set to Null. GLABR: none.	NO
Date of Collection/Exam	yyyymmdd	EXAMDATE	DATE_COMPLETE	CLABE: none. GLABR: Convert to yymmddn8.	YES
Date of Order	yyyymmdd	ORDDATE	ORDER_DT_TM_LOCAL	CLABE: none. GLABR: Convert to yymmddn8.	YES

M2 Object	Format	MDR CADRE LAB SAS Name	MDR GENESIS SAS Name	Business Rule	In M2 CADRE LAB Orders
Diagnosis Code 1	Char(10)	N/A	DX_CCE_1	CLABE: not applicable. GLABR: Use the CCE Diagnosis Code 1 (DX_CCE_1). Remove any decimal points.	NO
Diagnosis Code 2	Char(10)	N/A	DX_CCE_2	CLABE: not applicable. GLABR: Use the CCE Diagnosis Code 2 (DX_CCE_2). Remove any decimal points.	NO
Diagnosis Code 3	Char(10)	N/A	DX_CCE_3	CLABE: not applicable. GLABR: Use the CCE Diagnosis Code 3 (DX_CCE_3). Remove any decimal points.	NO
Eligibility Group	Char(1)	ELG_GRP	ELG_GRP	CLABE: none. GLABR: none.	YES
Enrollment Group	Char(1)	ENR_GRP	ENR_GRP	CLABE: none. GLABR: none.	YES
FIN GENESIS	Char(40)	N/A	FIN_E	CLABR: Set to Null. GLABR: Set length to 40.	YES
Fiscal Month	Char(2)	FM	FM	CLABE: none. GLABR: none.	YES
Fiscal Year	Char(4)	FY	FY	CLABE: none. GLABR: none.	YES
Inpatient Record ID	Char(10)	PRN	n/a	CHCS: Remove leading and trailing blanks. Length= 7. GENESIS: First 10 digits of ENCOUNTER_SK where INPT = 'Y'. Length=10.	YES
Lab Test Name	Char(100)	LABTEST	ORDERABLE_DISP	CLABR: Fill Down. GLABR: ORDERABLE_DISP.	YES
Line Number	Integer	Derive: ROWNUM	Derive: ROWNUM	Group By: chcs clabe: chcsdmis, orderid, accessno, labtest mhs genesis glabr: encounter_sk, order_sk, accession, orderable_disp Each unique combination forms a group. Order By: CHCS CLABE: chcsdmis, orderid, accessno, labtest, recno MHS GENESIS GLABR: encounter_sk, order_sk, accession, orderable_disp, event_sk Line_Number Assignment: Sequentially based on recno for CHCS Sequentially based on event_sk for GENESIS	NO
MHS GENESIS Flag	Char(1)	N/A	N/A	CLABR: "0". GLABR: "1". M2 should change 1/0 to Yes/No	YES
Millennium Encounter ID GENESIS	Char(22)	N/A	ENCOUNTER_SK	CLABR: Set to Null. GLABR: Set length to 22.	YES
MRN GENESIS	Char(40)	N/A	MRN	CLABR: Set to Null. GLABR: Set length to 40. Only visible in the restricted universe.	YES
Normal High GENESIS	Char(20)	N/A	NORMAL_HIGH	CLABR: Set to Null. GLABR: none.	NO
Normal Low GENESIS	Char(20)	N/A	NORMAL_LOW	CLABR: Set to Null. GLABR: none.	NO

M2 Object	Format	MDR CADRE LAB SAS Name	MDR GENESIS SAS Name	Business Rule	In M2 CADRE LAB Orders
Order ID	Char(12)	ORDERID	ORDER_SK	CLABE: none. GLABR: none.	YES
Ordering Provider EDIPN	Char(10)	OPEDIPN	PROV_ORD_EDIPN	CLABE: none. GLABR: none. Only visible in the restricted universe.	YES
Ordering Provider HIPAA Taxonomy	Char(10)	OPHIPAA	PROV_ORD_HIPAA	CLABE: none. GLABR: none.	YES
Ordering Provider Name	Char(61)	OPNAME	PROV_ORD_NAME	CLABE: none. GLABO: none.	YES
Ordering Provider NPI	Char(10)	OPNPI	PROV_ORD_NPI	CLABE: none. GLABR: none.	YES
Ordering Site of Record	Char(4)	ORDDMIS	MTF	CLABE: none. GLABR: none.	YES
PATCAT Subcategory	Char(1)	PATCAT2	N/A	CLABE: none. GLABR: none.	YES
Patient Code Category	Char(3)	PATCAT	PATCAT	CLABE: none. GLABR: none.	YES
Patient SSN	Char(9)	PATSSN	SSN	CLABE: none. GLABR: none. Only visible in the restricted universe.	YES
Person ID	Char(10)	EDIPN	EDIPN	CLABE: none. GLABR: none. Only visible in the restricted universe.	YES
Pseudo MRN GENESIS	Char(12)	N/A	MRN	CLABR: Set to Null. GLABR: Encryption algorithm applied to Medical Record Number (MRN).	YES
Result Abnormal	CHAR(80)	Derive: ABNORMAL	Derive: ABNORMAL	CLABR: none. GLABR: IF ABNORMAL_FLAG in ('Abnormal', 'Critical', 'High', 'Low') then ABNORMAL = substr(ABNORMAL_FLAG, 1, 1)||"" ""||trim(NRANGE)||"" ""||trim(CRANGE)||"" ""||trim(RESULTS_UNITS); else ABNORMAL = '';	NO
Result Abnormal Flag	Char(14)	Derive: ABNORMAL_FLAG	Derive: ABNORMAL_FLAG	CLABR: if substr(abnormal, 1, 1) = "L" then abnormal_flag= "LOW"; else if substr(abnormal, 1, 1) = "H" then abnormal_flag ="HIGH"; else abnormal_flag = ""; GLABR: trim(upper(EVENT_NORMACY));	NO

M2 Object	Format	MDR CADRE LAB SAS Name	MDR GENESIS SAS Name	Business Rule	In M2 CADRE LAB Orders
Result LOINC Code	Char(10)	LOINC	LOINC_CODE	CLABR: Set length to 10. GLABR: Set length to 10.	NO
Result LOINC Name GENESIS	Char(100)	N/A	LOINC_DESCRIPTION	CLABR: Set to Null. GLABR: Set length to 100.	NO
Result Name	Char(60)	LABTESTR	EVENT_CODE	CLABR: obtain LABTESTR when labtestr not missing, merge on chcsdmis, accessno, recno. If missing(labtestr) then delete. GLABR: Obtain EVENT_CODE as labtestr, merge on encounter_key, accession, order_sk, orderable_disp.	YES
Result Numeric	17.4	LABVALUE	RESULT_VALUE	CLABR: If LABVALUE is numeric, else missing. GLABR: if RESULT_VALUE is numeric, else blank. Remove single quote, if applicable. Use value as received from MDR. For example, 1.5000 should display as 1.5000 and 1.5 should display as 1.5	YES
Result Text	Char(30)	LABVALUE	RESULT_VALUE	CLABR: if LABVALUE is text, else blank. GLABR: if RESULT_VALUE is text, else blank. Remove single quote.	YES
Result Units of Measure GENESIS	Char(60)	N/A	RESULTS_UNITS	CLABR: Set to Null. GLABR: none.	NO
Result Value	Char(30)	LABVALUE	RESULT_VALUE	CLABR: none. GLABR: Set length to 30	NO
Service Date	yyyymmdd	SERVDATE	SERVICE_DT_TM_LOCAL	CLABE: none. GLABO: Convert to yymmddn8.	YES
Specimen GENESIS	Char(38)	N/A	SPECIMEN	CLABR: Set to Null. GLABR: none.	NO
Sponsor ID	Char(9)	SPONSSN	SPONSSN	CLABR: none. GLABR: none. Only visible in the restricted universe.	YES
Sponsor Service	Char(1)	SVC	SPONSVC	CLABE: none. GLABO: none.	YES
Tmt DMIS ID	Char(4)	TMTDMIS	MTF_RESULTED	CLABE: none. GLABO: none.	YES
Tmt Parent DMIS ID	Char(4)	PDMIS	MTF_PARENT_REC	CLABE: none. GLABR: none.	YES
Verified Date	yyyymmdd	CERTDATE	VERIFIED_DT_TM_LOCAL	CLABR: None. GLABR: Convert to yymmddn8.	NO
Number of Results Maximum	Num(9,0)	ACCESSNO	ACCESSION	Count number of rows per Accession Number. In other words, return maximum Line Number for each Accession Number.	NO

M2 Fields: Table 2 includes M2 fields; these are fields that are not in the MDR feed but are visible in M2. These data fields are created in M2 by table joins or calculations made during loading of the data. Table 2 describes these elements and the rules to create them.

Table 2. M2 Fields

M2 Object	Format	Business Rule
Ben Cat Common Des	Char(28)	Based on Ben Cat Common: 1 = AD/Guard Family Member 2 = Retirees 3 = Other 4 = AD/Guard
Beneficiary Category Desc	Char(30)	ACT=Active Duty DA=Active Duty Family DCO=Direct Care Only DGR=Dep of Guard/Res on AD DR=Retiree Family DS=Survivor GRD=Guard/Res on AD IDG=Inactive Guard/Res Family IGR=Inactive Guard/Res NAT=NATO OTH=Other RET=Retirees UNK=Unknown Z=Unknown
Certifying Provider HIPAA Taxonomy Desc	Char(50)	Lookup Certifying Provider HIPAA Taxonomy with the Health Care Provider Taxonomy Reference Table and return the Description, Short.
Eligibility Group Description	Char(45)	C = Continued Health Care Benefit Program (CHCBP) D = Direct Care Only E = TRICARE Eligible L = TRICARE for Life (TFL) R = TRICARE Retired Reserve (TRR) S = TRICARE Reserve Select (TRS) Y = TRICARE Young Adult (TYA) Z = None
Enrollment Group Description	Char(27)	P = TRICARE Prime D = Direct Care Only L = TRICARE Plus S = TRICARE Select U = Designated Provider (USFHP) Z = Not Enrolled Blank = pre-2018
Fiscal Quarter	Char(1)	If FM in (1,2,3) then Fiscal Quarter=1; else if FM in (4,5,6) then Fiscal Quarter=2; else if FM in (7,8,9) then Fiscal Quarter = 3; else Fiscal Quarter = 4. 1 = FM 1-3 (Oct-Dec) 2 = FM 4-6 (Jan-Mar) 3 = FM 7-9 (Apr-Jun) 4 = FM 10-12 (Jul-Sep)
Market Area ID	Char(4)	Join to the Market Table by FY, FM, Beneficiary Zip Code, and Sponsor Service.
MTF Service Area	Char(4)	Join to the Market Table by FY, FM, Beneficiary Zip Code, and Sponsor Service.
MTF Service Area Name	Char(40)	Join to the Market Table by FY, FM, Beneficiary Zip Code, and Sponsor Service.

M2 Object	Format	Business Rule
Number of Records	Num(9,0)	Count numbers requested by query. This will be a measure.
Number of Tests	Num(9,0)	If Line Number equals 1, then 1, else 0. This will be a measure.
Ordering Provider HIPAA Taxonomy Desc	Char(50)	Lookup Ordering Provider HIPAA Taxonomy with the Health Care Provider Taxonomy Reference Table and return the Description, Short.
Ordering Site Financial Parent	Char(4)	See DMIS ID specification for rule.
Ordering Site Financial Parent Name	Char(40)	See DMIS ID specification for rule.
Ordering Site ID/Appoint Record ID	Char(14)	M2 User Defined Object (UDO) that is the concatenation of Ordering Site and Appointment Record ID.
Ordering Site ID/InPatient Record ID	Char(14)	M2 User Defined Object (UDO) that is the concatenation of Ordering Site and Inpatient Record ID.
Ordering Site of Record Base Market Code	Char(10)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Ordering Site of Record Command	Char(6)	Join to the DMIS Table by FY and Ordering Site.
Ordering Site of Record DHP Code	Char(1)	Join to the DMIS Table by FY and Ordering Site of Record.
Ordering Site of Record Expanded Market Code	Char(10)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Ordering Site of Record Market Name	Char(40)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Ordering Site of Record Mil Svc	Char(1)	Join to the DMIS Table by FY and Ordering Site of Record.
Ordering Site of Record MSMA	Char(3)	Join to the DMIS Table by FY and Ordering Site of Record.
Ordering Site of Record Name	Char(40)	Join to the DMIS Table by FY and Ordering Site of Record.
Ordering Site of Record Readiness CMD	Char(8)	See DMIS ID specification for rule.
Ordering Site of Record Readiness Service	Char(1)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Ordering Site of Record Reporting Market Code	Char(10)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Ordering Site of Record Reporting Market Name	Char(40)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Ordering Site of Record Type of Market Code	Char(10)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Ordering Site of Record Type of Market Name	Char(40)	Join to the DMIS ID Table by Ordering Site DMIS ID and FY. Populated FY18+.
Prime Service Area	Char(1)	Populated as part of the ETL process.
Pseudo Patient SSN	Char(9)	Encryption algorithm applied to Patient SSN by the ETL process.
Pseudo Person ID	Char(10)	Encryption algorithm applied to Person ID by the ETL process.
Pseudo Sponsor ID	Char(9)	Encryption algorithm applied to Sponsor ID by the ETL process.

M2 Object	Format	Business Rule
Tmt DMIS ID Base Market Code	Char(10)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID Command	Char(6)	Join to the DMIS Table by FY and Tmt DMIS ID.
Tmt DMIS ID DHP Code	Char(1)	Join to the DMIS Table by FY and Tmt DMIS ID.
Tmt DMIS ID Expanded Market Code	Char(10)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID Financial Parent	Char(4)	See DMIS ID specification for rule.
Tmt DMIS ID Financial Parent Name	Char(40)	See DMIS ID specification for rule.
Tmt DMIS ID Market Name	Char(40)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID MSMA	Char(3)	Join to the DMIS Table by FY and Tmt DMIS ID.
Tmt DMIS ID Name	Char(40)	Join to the DMIS Table by FY and Tmt DMIS ID.
Tmt DMIS ID Readiness CMD	Char(8)	See DMIS ID specification for rule.
Tmt DMIS ID Readiness Parent	Char (4)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID Readiness Service	Char (1)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID Reporting Market Code	Char(10)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID Reporting Market Name	Char(40)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID Type of Market Code	Char(10)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt DMIS ID Type of Market Name	Char(40)	Join to DMIS ID Table by TMT DMIS ID and FY. Populated FY18+.
Tmt Parent DMIS ID Name	Char(40)	Join to the DMIS Table by FY and Tmt DMIS Parent.

VI.   M2 Location:

Health Care Services / Direct Care / Laboratory and Radiology / Laboratory Results.