**20 January 2022**

Comprehensive Ancillary Data Record Extract (CADRE) Radiology Enhanced

for the

MHS Data Repository (MDR)

(Version 1.02.06)

Current Specification

Revision History

| Version | Date | Originator | Para/Tbl/Fig | Description of Change |
| --- | --- | --- | --- | --- |
| 1.00.00 | 11/28/2014 | S. Keane |  | * Initial Release. |
| 1.00.01 | 12/04/2014 | S. Keane | Section V and Table 2. | * Delete “Provide Order Number”. |
| 1.00.02 | 01/14/2015 | S. Keane | Sections I, IV, V, VI, VII. | * Update rules for External file matching. * Update key. * Update file layout. * Delete cancellation file. |
| 1.00.03 | 8/3/2015 | S. Keane | Section V and Appendix A. | * Update business rules for certain fields. |
| 1.00.04 | 8/19/2015 | S. Keane | Table 2. | * Update business rules for Relationship to sponsor (rel). |
| 1.00.05 | 1/14/2016 | S. Keane | Section V and Table 2. | * “Flatten” file. |
| 1.00.06 | 2/12/2016 | S. Keane | Table 2. | * Remove “bilat” reference. |
| 1.00.07 | 3/30/2016 | S. Keane | Table 2. | * Change MDRkey to numeric. |
| 1.00.08 | 05/17/2016 | S. Keane | Table 2. | * Set Inpatient Record ID (PRN) to char7, stripped, with leading zeros. * Update derivation rules for Beneficiary Residence Region (PATREGN) and HSSC Residence Region (RSREG). |
| 1.01.00 | 10/25/2017 | K. Hutchinson | Table 2 | * Changes for NDAA 2017 and T2017 * Delete fields |
| 1.01.01 | 06/01/2018 | S. Keane | Table 2. | * *Administrative changes only. Removed Appendix A as no longer required.* |
| 1.02.02 | 02/12/2020 | S. Keane | Table 2 | * Add Number of Orders (ordcount). |
| 1.02.03 | 06/19/2020 | S. Keane | Table 2 | * Add Certifying Provider Name, Ordering Provider Name, PCM Name, PCM NPI, PCM NPI Type Code, and Service Line Ordering. |
| 1.02.04 | 12/14/2020 | S. Keane | Table 2 | * Specify Last, First Names for Certifying Provider Name and Ordering Provider Name. |
| 1.02.05 | 12/06/2021 | S. Keane | Table 2 | * Add “S” Space Force to list of values for Sponsor Branch of Service (svc) and Sponsor Branch of Service, Aggregate (svcagg). |
| 1.02.06 | 01/20/2022 | S. Keane | Section II | * Update Frequency of processing and updates. |

# CADRE Radiology Enhanced for the MDR

This functional specification describes the process required to convert the CADRE Radiology Basic, as described in the specification “Comprehensive Ancillary Data Record Extract (CADRE) Radiology Basic for the MHS Data Repository (MDR),” into the CADRE Radiology Enhanced. In time, the dataset(s) developed from this specification will replace the Ancillary dataset(s) described in the specification “Ancillary Laboratory and Radiology for the MHS Data Repository (MDR).”

1. Source

The most recent CADRE Radiology Basic file is the source for the CADRE Radiology Enhanced file.

1. Organization and batching

* Time slicing: Organize data into fiscal year files. The Fiscal Year is determined by the Date of Service (SERVDATE) field.
* Frequency of processing and updates:
  + Current FY: Weekly after the CADRE Radiology Basic.
  + Prior FY: Weekly for one quarter (October, November, and December) then semiannually (e.g. April, October).
  + All years prior to prior FY: Annually (October) or on an as needed basis when data corrections or updates are required.
* Archiving (APUB): Use routine archiving rules and procedures of the MDR.

1. Receiving Filters

None.

1. Field Transformations and Deletions

Table 1 lists the external reference files (and criteria) used to append many fields to the CADRE Radiology Enhanced file.

Table 1: External Reference Files

| **Merge** | **Date Matching** | **Additional Matching** |
| --- | --- | --- |
| Master Person Index | n/a | See MPI Specification |
| Longitudinal VM4 | Date of Service (SERVDATE) | Patient EDIPN (EDIPN) |
| DEERS | Date of Service (SERVDATE) | Patient EDIPN (EDIPN) or SSN |
| DMISID Index | FY of Date of Service (SERVDATE) | Treatment DMIS ID (TMTDMIS) |
| Omni-CAD | FY/FM of Date of Service (SERVDATE) | Beneficiary Zip Code (PATZIP) and Sponsor Branch of Service (SVC) |
| Reservist GWOT | Date of Service (SERVDATE) | Sponsor SSN (SPONSSN) |
| Enrollment MEPRS | Date of Service (SERVDATE) | Join based on rules in Appendix A, section 1 of the Enrollment MEPRS Code specification |
| CPT Weight Table | CY of Date of Service (SERVDATE) | CPT Code (CPT) and CPT Code Modifier (CPTMOD) |
| Cost | FY of Date of Service (SERVDATE) | MEPRS Parent (MEPRDMIS) |
| Ancillary Transfusion (/mdr/ref/ancillary.transfuse.cyxx.fmt) | CY of Date of Service (SERVDATE) | Treatment DMIS ID (TMTDMIS) and CPT Code (CPT) |

1. Updating the Master Tables

To apply an update: append new records to the CADRE Radiology Enhanced Table. The unique identifier or Record Key is defined as the combination of CHCS Host DMIS ID, Accession Number, Order ID, CPT Code, and CPT Code Modifier. That is, CHCSDMIS || ACCESSNO || ORDERID || CPT || CPTMOD.In the event of duplicate records, e.g., those with the same unique identifier or Record Key: CHCSDMIS || ACCESSNO || ORDERID || CPT || CPTMOD, retain the record with the newest Extract File Date (FILEDATE) [extracted from the File Name]. Delete duplicates before updating CADRE Radiology Enhanced Table.

1. File Layout and Content

MDR CADRE Radiology Enhanced Table has one core file as described in Table 2. Keep from Variables are listed in the following order: Record Key variables and then alphabetically (approximately) by source.

Table 2: MDR CADRE Radiology Enhanced Table

| **MDR Field Name** | **SAS Name** | **SAS Format** | **Business Rule** |
| --- | --- | --- | --- |
| ***CADRE Radiology Basic*** |  |  |  |
| CHCS Host Platform DMIS ID | chcsdmis | $4 | No Derivation. |
| Accession Number | accessno | $17 | No Derivation. A radiology exam has a unique accession number. There may be more than one record per accession number as more than one entry may be made for a radiology exam. |
| Order ID | orderid | $12 | No Derivation. |
| CPT Code | cpt | $5 | No Derivation. |
| CPT Code Modifier | cptmod | $2 | No Derivation. |
| Record Type Modifier | mod | $2 | No Derivation. |
| Appointment Match Indicator | apptmatch | $3 | No Derivation. |
| Appointment Record ID | apptno | $20 | No Derivation. Aka Appointment IEN. |
| Calendar Month | cm | $2 | No Derivation. |
| Calendar Year | cy | $4 | No Derivation. |
| Certifying Provider EDIPN | cpedipn | $10 | No Derivation. |
| Certifying Provider HIPAA Taxonomy | cphipaa | $10 | No Derivation. |
| Certifying Provider IEN | cpien | $20 | No Derivation. |
| Certifying Provider NPI | cpnpi | $10 | No Derivation. |
| Certifying Provider SSN | cpssn | $9 | No Derivation. |
| Date of Collection/Exam | examdate | yyyymmdd | No Derivation. |
| Date of Order | orddate | yyyymmdd | No Derivation. |
| Date of Service | servdate | yyyymmdd | No Derivation. |
| Date Report Verified | verfdate | yyyymmdd | No Derivation. |
| Extract File Date | filedate | yyyymmdd | No Derivation. |
| Fiscal Month | fm | $2 | No Derivation. |
| Fiscal Year | fy | $4 | No Derivation. |
| Inactive CPT Code Indicator | nactcpt | $1 | No Derivation. |
| Initial Processing Date | procdate | yyyymmdd | No Derivation. |
| Inpatient Record ID | prn | $7 | Change to Char7; add leading zeros (if applicable). Remove leading and trailing blanks. Aka Register Number. |
| Master Change Code | chgcode | $1 | No Derivation. |
| Master Change Date | chgdate | yyyymmdd | No Derivation. |
| Number of Services | count | comma | No Derivation. Sum in final. |
| OHI Indicator | ohi | $1 | No Derivation. |
| Ordering DMIS ID | orddmis | $4 | No Derivation. Aka Order Requesting Location DMIS ID. |
| Ordering MEPRS Code | meprscd | $4 | No Derivation. Aka Order Requesting Location MEPRS Code. |
| Ordering Provider EDIPN | opedipn | $10 | No Derivation. |
| Ordering Provider HIPAA Taxonomy | ophipaa | $10 | No Derivation. |
| Ordering Provider IEN | opien | $20 | No Derivation. |
| Ordering Provider NPI | opnpi | $10 | No Derivation. |
| Ordering Provider SSN | opssn | $9 | No Derivation. |
| Patient Age | patage | Numeric | No Derivation. |
| Patient Category Code | patcat | $3 | No Derivation. |
| PATCAT subcategory | patcat2 | $1 | No Derivation. |
| Patient EDIPN (raw) | redipn | $10 | No Derivation. Aka Patient Identifier on record. |
| Patient Family Member Prefix | fmp | $2 | No Derivation. |
| Patient HCDP Code (raw) | hcdpr | $3 | No Derivation. |
| Patient IEN | patien | $20 | No Derivation. |
| Patient SSN | patssn | $9 | No Derivation. |
| Patient SSN Type Code | patssntyp | $1 | No Derivation. Type code describing the Patient SSN. Valid values:  D = Temporary Identification Number (TIN)  F = Foreign Identification Number (FIN)  I = Provider Tax ID (ITIN)  P = US military personnel code prior to SSNs  R = Special Code assigned to a DOD contractor  S = Social Security Number (SSN)  U = Pseudo SSN |
| Performing CMAC Locality Code | cmaccd | $3 | No Derivation. |
| Purchased Service Facility ID | psfid | $12 | No Derivation. Purchased Service Facility IEN. Previously named IEN/SSN (ienssn). |
| Purchased Service Facility ID Type Code | psfidtyp | $2 | No Derivation. The type (IEN/SSN) of the Purchased Service Facility Identifier. Valid values: 24 = IEN, 34 = SSN. Previously named External Indicator (external). |
| Record Number | recno | Numeric | No Derivation. Numeric. |
| Sponsor SSN (raw) | rsponssn | $9 | No Derivation. |
| Sponsor SSN (raw) Type Code | rsponssntyp | $1 | No Derivation. Type code describing the Sponsor SSN (raw). Valid values: D = Temporary Identification Number (TIN)  F = Foreign Identification Number (FIN)  I = Provider Tax ID (ITIN)  P = US military personnel code prior to SSNs  R = Special Code assigned to a DOD contractor  S = Social Security Number (SSN)  U = Pseudo SSN. |
| Treatment DMIS ID | tmtdmis | $4 | No Derivation. Aka Performing DMIS ID. |
| Treatment Group/Parent DMIS ID | pgrpdmis | $4 | No Derivation. |
| ***CADRE Radiology Enhanced Internally Derived Fields*** |  |  |  |
| ACV Group | acvgroup | $15 | If SERVDATE >=1/1/2018 then do:  if ENR\_GRP=P then PR  else if ENR\_GRP=L then PL  else if ENR\_GRP=U then DP  else if (COMBEN=4 and PCM\_TYPE=N) then R  else if PCM\_TYPE=O then R  else if ELG\_GRP= R or S then O else O  For FY12 to Dec 31, 2017:  If ACV = A, E, H, or J then PR  Else if ACV = B or F then OP  Else if ACV = G or L then PL  Else if ACV = U then DP  Else if ACV = R or V then O  Else if ACV = M or Q then R  Else if COMBEN=4 then R  Else O |
| Age Group Common | agegroup | $1 | If 0 <= PATAGE <= 4 then "A"  Else if PATAGE <= 14 then “B”  Else if PATAGE <= 17 then “C”  Else if PATAGE <= 24 then “D”  Else if PATAGE <= 34 then “E”  Else if PATAGE <= 44 then “F”  Else if PATAGE <= 64 then “G”  Else if PATAGE <= 69 then “H”  Else if PATAGE <= 74 then “I”  Else if PATAGE <= 79 then “J”  Else if PATAGE <= 84 then “K”  Else if PATAGE not blank or negative then "L"  Else "Z". |
| Beneficiary Category (common) | comben | $1 | Derive from Bencat (D\_COM\_BEN\_CAT). If “DA,” "DGR" then assign “1.”  Else if “RET” then assign “2.”  Else if “DR”,”DS”,”DCO”,”NAT”, “IGR”, “IDG”, ”OTH”,”UNK” then assign “3”.  Else if “ACT,” “GRD” then assign “4.” |
| Certifying Provider Name | cpname | $61 | Use DMHRSi as lookup to obtain LAST\_NM, FIRST\_NM. |
| Derived Number of Services | drvcount | Numeric | This is approximate civilian equivalent number of services. If CPT Code (CPT) is in reference table /mdr/ref/ancillary.bilat.fmt.cyxx for the corresponding year or the Record Type modifier indicates a bilateral code (MOD in 50, 51 or 99) and Number of Services (COUNT) >1, then drvcount=count/2; else drvcount=count. |
| Inpatient Indicator | inpt | $1 | This is “Y” if Inpatient Record ID (PRN) field is populated, and “N” if empty. |
| M2Key | m2key | $6 | Base 62 of MDR Key. |
| MDR Key | mdrkey | Numeric | Sequential counter of records. |
| MPI Status Flag | mpiflag | $1 | Flag has value of E if an EDI-PN (EDIPN) replaces a previous blank field. Otherwise, mpiflag has a blank value. |
| Number of Orders | ordcount | Numeric | If first ORDERID then 1; else 0. |
| Ordering Provider Name | opname | $61 | Use DMHRSi as lookup to obtain LAST\_NM, FIRST\_NM. |
| Relationship (to sponsor) | rel | $1 | Derived from first character of Patient Family Member Prefix (FMP) using rules in “MDR Master Person Index” Table 4: If FMP is 01-19 then Relationship = “1”  If FMP is 20 then Relationship = “2”  If FMP is 30-39 then Relationship = “3”  If FMP is in list 40, 45, 50, 55, or is within 60-69, then Relationship is “4”  ELSE Relationship is “2”. |
| Service Line Ordering | svclineo | $5 | Apply format from service line map. mepr3=substr(meprscd,1,3);  svclineo = put(mepr3,$slfmt.); |
| ***MPI*** |  |  |  |
| EDI-PN | edipn | $10 | Results of MPI merge procedures with Patient EDIPN (raw) (REDIPN). If REDIPN is missing or null, apply routine MDR procedures for MPI merge. DoD Electronic Data Interchange Person Identifier DOD\_EDI\_PN\_ID. |
| Person Association Reason Code | PARC | $2 | Results of MPI merge procedures. Change blank values to ZZ. Person Association Reason Code PNA\_RSN\_CD. |
| Sponsor SSN | sponssn | $9 | Results of MPI merge procedures. Sponsor Person Identifier (SSN) SPN\_PN\_ID. |
| ***VM4*** |  |  |  |
| ACV | acv | $1 | DEERS ACV in longitudinal derivation of VM4 where service date in ACV date range and the ACV on the segment is “not Z.” If bencat is active or guard/reserve, then assign “M”; else set to blank if beneficiary is not active or guard/reserve. |
| Beneficiary Category | bencat | $3 | Ben Cat (R\_BEN\_CAT\_CD) in longitudinal derivation of VM4 where service date in Ben Cat date range. If no match, derive from patient category code using universal PATCAT format table. Change value Z to UNK. |
| Beneficiary Zip Code | patzip | $5 | Zip Code (D\_ZIP\_CD) in longitudinal derivation of VM4 where service date in zip code date range, or “NONE” if unmatched. |
| Date of Birth | dob | yyyymmdd | Date of birth (PN\_BRTH\_DT) in longitudinal derivation of VM4. |
| HCDP - Enrolled | hcdplvm4 | $3 | HCDP code in longitudinal derivation of VM4. |
| DEERS Match Flag | deers | $1 | “1” if EDI-PN matched with longitudinal VM4; “0” if no EDI-PN match in VM4. |
| Enrollment DMIS ID | enrdmis | $4 | Enrollment DMIS ID (D\_MI\_PCM\_EDVSN\_DMIS\_ID) in longitudinal derivation of VM4 where service date in the enrollment dmis id date range, or “NONE” if unmatched. |
| Gender | sex | $1 | Gender (PN\_SEX\_CD) in longitudinal derivation of VM4. If no match or blank, set value to Z=unknown. |
| Medicare Eligibility | medelg | $1 | Medicare Eligibility in longitudinal derivation of VM4 based on Privcode, age. If no match or blank, set value to N. |
| PCM ID | pcmid | $18 | PCM ID (D\_MI\_PCM\_ID) in longitudinal derivation of VM4 where service date in the PCM ID date range. |
| Privilege Code | privcode | $1 | Privilege code (D\_ELG\_CD) in the longitudinal derivation of VM4 where service date in privilege code date range. |
| Sponsor Branch of Service | svc | $1 | Sponsor service in longitudinal derivations of VM4 where service date is sponsor service date range. If no match, derive from 1st letter of PATCAT. If U, then recode as Z. If not (A,F,N,M,C,S,Z), then recode as X. If blank after the above, set to Z=Unknown. |
| Sponsor Branch of Service, Aggregate | svcagg | $1 | Aggregated sponsor service in longitudinal derivation of VM4 where service date in sponsor service date range. If no match, derive from 1st letter of PATCAT. If U, then recode as Z. If not (A,F,N,M,C,S,Z), then recode as X. If blank after the above, set to Z=Unknown. |
| Tricare Prime Remote Eligibility Flag | TPRelig | $1 | Merge to the VM6 where service date in the enrollment date range. Use D\_TPR\_ELG\_CD. |
| HCDP – Assigned | hcdp\_assgn | $3 | If the SERVDATE is between the begin and end date of D\_MI\_HCDP\_PLN\_CVG\_CD then fill with D\_MI\_HCDP\_PLN\_CVG\_CD, else leave blank. See DEERS VM6 specification, section G18 and 19 for segment and field position. |
| Eligibility Group | elg\_grp | $2 | If the SERVDATE is between the begin and end date of D\_ELG\_GRP\_CD then fill with D\_ELG\_GRP\_CD, else leave blank. See DEERS VM6 specification, section G18 and 19 for segment and field position. |
| Enrollment Group | enr\_grp | $2 | If the SERVDATE is between the begin and end date of D\_ENR\_GRP\_CD then fill with D\_ENR\_GRP\_CD, else leave blank. See DEERS VM6 specification, section G18 and 19 for segment and field position. |
| Enrollment PCM Type | pcm\_type | $1 | If the SERVDATE is between the begin and end date of D\_PCM\_TYPE\_CD then fill with D\_PCM\_TYPE\_CD, else leave blank. See DEERS VM6 specification, section G18 and 19 for segment and field position. |
| ***DEERS or PCM Table*** |  |  |  |
| Primary Care Manager Name | pcmid\_nm | $40 | D\_MI\_PCM\_NM from DEERS merge. |
| Primary Care Manager NPI | pcmid\_npi | $10 | D\_PCM\_NP\_ID from DEERS merge. |
| PCM NPI Type Code | pcmid\_npi\_typ | $1 | D\_PCM\_NP\_ID\_TYP\_CD from DEERS merge. |
| ***DMIS*** |  |  |  |
| MEPRS Parent | meprdmis | $4 | MEPRS Parent (MEPR\_PAR) of treatment DMIS from DMIS table. |
| Parent DMIS | pdmis | $4 | Parent DMIS (UBU\_PAR) of treatment DMIS from DMIS table. |
| Treatment Service | tmtsvc | $1 | Service (UBU\_SVC) of treatment DMIS from DMIS table. |
| Enrollment Site T3 Region | enr\_t3\_reg | $2 | T3\_REG from DMIS ID Index, based on matching FY and ENRDMIS |
| Enrollment Site T17 Region | enr\_t17\_reg | $2 | T17\_REG from DMIS ID Index, based on matching FY and ENRDMIS |
| Treatment DMIS ID T3 Region | mtf\_t3\_reg | $2 | T3\_REG from DMIS ID Index, based FY and TMTDMIS |
| Treatment DMIS ID T17 Region | mtf\_t17\_reg | $2 | T17\_REG from DMIS ID Index, based FY and TMTDMIS |
| Ordering DMIS ID T3 Region | ord\_t3\_reg | $2 | T3\_REG from DMIS ID Index, based FY and ORDDMIS |
| Ordering DMIS ID T17 Region | ord\_t17\_reg | $2 | T17\_REG from DMIS ID Index, based FY and ORDDMIS |
| ***DMIS-CAD*** |  |  |  |
| Catchment Area ID | catch | $4 | Catchment Area DMIS ID (x\_WORLD) of patient residence, based on matching FY, FM, Beneficiary Zip Code (PATZIP), and Sponsor Branch of Service (SVC). |
| PRISM Area ID | prism | $4 | Prism Service Area DMIS ID (x\_PRISM) of patient residence, based on matching FY, FM, Beneficiary Zip Code (PATZIP), and Sponsor Branch of Service (SVC). |
| Tricare Prime Remote Flag | TPRflag | $1 | TPR Flag (TPRFLAG), based on matching FY, FM, and Beneficiary Zip Code (PATZIP). |
| Beneficiary T3 Region | ben\_t3\_reg | $2 | T3\_REG, based on matching to OMNI CAD using FY and PATZIP |
| Beneficiary T17 Region | ben\_t17\_reg | $2 | T17\_REG, based on matching to OMNI CAD using FY and PATZIP |
| ***Reservist*** |  |  |  |
| Special Operation Code | soc | $2 | Merge to the Reservist Table File by Sponsor SSN. Reservist Special Operation Code is appended to the encounter record if the encounter date occurred during the time frame in which the beneficiary is eligible to receive TRICARE benefits, that is, is within the begin and end dates inclusive on a matching Reservist Table file record. |
| ***Enrollment MEPRS*** |  |  |  |
| Enrollment MEPRS Code | med\_home\_meprs | $4 | Join based on rules in Appendix A, section 1 of the Enrollment MEPRS Code specification and Date of Service. med\_home\_meprs. |
| ***CPT Weight Table*** |  |  |  |
| Relative Value Units (Facility Practice) | fprvu | 6.2 | From CPT Weight Table: Raw MHS updated Facility Practice Expense RVU of CPT Code (pexpfadc) for corresponding year, adjusted for modifiers and multiplied by derived number of services. |
| Relative Value Units (Non-facility Practice) | nprvu | 6.2 | From CPT Weight Table: Raw MHS updated Non-facility Practice Expense RVU of CPT Code (pexpnfdc) for corresponding year, adjusted for modifiers and multiplied by derived number of services. |
| Relative Value Units (Work) | rvuwork | 6.2 | From CPT Weight Table: Raw MHS updated Work RVU of CPT code (workdc) for corresponding year, multiplied by derived number of services. |
| Relative Value Units (Total) | rvu | 6.2 | Sum the values of Work RVU (rvuwork) and Non-facility Practice RVUs (nprvu). |
| ***Cost*** |  |  |  |
| Full Cost | fullcost | 8.2 | Product of appropriate rvu and cost fields. Use r\_fcostw, r\_fcostp.  fullcost=sum((rvuwork\*r\_fcostw),(nprvu\*r\_fcostp)). |
| Rad Full Cost / Practice (non-facility) RVU | r\_fcostp(not stored) | 10.6 | MEPRS Parent’s unit cost for radiology in matching year (not stored in final DB). |
| Rad Full Cost / Work RVU | r\_fcostw(not stored) | 10.6 | MEPRS Parent’s unit cost for radiology in matching year (not stored in final DB). |
| Rad Variable Cost / Practice (non-facility) RVU | r\_vcostp(not stored) | 10.6 | MEPRS Parent’s unit cost for radiology in matching year (not stored in final DB) |
| Rad Variable Cost / Work RVU | r\_vcostw(not stored) | 10.6 | MEPRS Parent’s unit cost for radiology in matching year (not stored in final DB). |
| Variable Cost | varcost | 8.2 | Product of appropriate rvu and cost fields. Use r\_vcostw, r\_vcostp. varcost=sum((rvuwork\*r\_vcostw),(nprvu\*r\_vcostp)). |

1. Data Marts

MHS Mart (M2)

See *M2 Radiology Ancillary\** functional specification of those respective MDR-to-M2 feeds.

1. Quality Assurance

The processor should conduct routine quality assurance checks to ensure input and output data are valid, complete, and reliable. At a minimum, the processor should:

* Compare current raw data row counts to ensure data are consistent with previous raw data feeds.
* Ensure pre-processing data subtotals equal post-processing data subtotals.
* Evaluate post-processing values for data that appear out of the ordinary, or not consistent with SME expected values (face validity).