for z/OS Batch

Medicare Code Editor Software

Installation Manual ICD-10 Version

v37.0 October 2019

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About this document

This manual contains the information needed to install version 37.0 of the Medicare Code Editor (MCE) software that runs under the z/OS batch operating system. The manual assumes that the person installing the software has experience working with Basic Assembly Language (BAL) and z/OS Job Control Language (JCL).

Note: z/OS will be upgraded from version 2.1 to version 2.3 for the first release of 2020 and will remain backward compatible to version 1.8.

Chapter 1: Introduction

On April 20, 1983, Congress enacted "Prospective Payment for Medicare Inpatient Hospital Services" as Title VI of the Social Security Amendment. Under Title VI, hospitals are paid a fixed price by Diagnosis Related Group (DRG) for treating Medicare patients.

In order to determine the appropriate DRG for a Medicare patient, the age, sex, discharge status, principal diagnosis, secondary diagnoses, and procedures performed must be reported by hospitals to their Medicare fiscal intermediaries. The logic of the DRG Definitions assumes that the patient information provided is accurate, and no attempt is made by the DRG Definitions to edit the data for accuracy. Only for extreme inconsistencies in the medical information will a DRG not be assigned to a patient record.

Types of edits

Three types of edits can be performed before assigning a DRG:

- Code edits examine a record for the correct use of the ICD codes that describe a patient's diagnoses and procedures. Code edits include basic consistency checks on the interrelationships of a patient's age, sex, length of stay, and diagnoses and procedures.

- Coverage edits examine patient type and performed procedures to determine if the services rendered are covered by Medicare and to what extent they are covered.

- Clinical edits examine the clinical consistency of the diagnostic and procedural information on the medical claim to determine if they are clinically reasonable and therefore if they should be paid.

In a first phase of edits, the Centers for Medicare & Medicaid Services (CMS) provides all fiscal intermediaries with a code editing package, referred to as the Medicare Code Editor (MCE). MCE software contains edits that deal primarily with coding and coverage related issues.

Purpose of the software

MCE detects and reports errors in the coding of claims data. While the program identifies and indicates the nature of the error, it does not correct the error. A particular error condition is associated with each type of coding error that is identified.

Versions and date ranges

The following table lists the versions contained in this release of MCE software. The patient's discharge date determines the version used for processing.

Table 1.   Program versions with discharge date ranges

MCE Version	DRG Version	Discharge date range
MCE 37.0 (ICD-10)	DRG 37.0 (ICD-10)	10/01/2019-09/30/2020
MCE 36.0 (ICD-10)	DRG 36.0 (ICD-10)	10/01/2018-09/30/2019
MCE 35.0 (ICD-10)	DRG 35.0 (ICD-10)	10/01/2017-09/30/2018
MCE 34.0 (ICD-10)	DRG 34.0 (ICD-10)	10/01/2016-09/30/2017
MCE 33.0 (ICD-10)	DRG 33.0 (ICD-10)	10/01/2015-09/30/2016
MCE 32.0	DRG 32.0	10/01/2014-09/30/2015
MCE 31.0	DRG 31.0	10/01/2013-09/30/2014
MCE 30.0	DRG 30.0	10/01/2012-09/30/2013
MCE 28.0	DRG 29.0	10/01/2011-09/30/2012
MCE 27.0	DRG 28.0	10/01/2010-09/30/2011
MCE 26.0	DRG 27.0	10/01/2009-09/30/2010
MCE 25.0	DRG 26.0	10/01/2008-09/30/2009
MCE 24.1	DRG 25.1	04/01/2008-09/30/2008
MCE 24.0	DRG 25.0	10/01/2007-03/31/2008
MCE 23.0	DRG 24.0	10/01/2006-09/30/2007
MCE 22.0	DRG 23.0	10/01/2005-09/30/2006
MCE 21.0	DRG 22.0	10/01/2004-09/30/2005
MCE 20.0	DRG 21.0	10/01/2003-09/30/2004
MCE 19.0	DRG 20.0	10/01/2002-09/30/2003
MCE 18.0	DRG 19.0	10/01/2001-09/30/2002
MCE 17.0	DRG 18.0	10/01/2000-09/30/2001
MCE 16.0	DRG 17.0	10/01/1999-09/30/2000
MCE 15.1	DRG 16.0	07/01/1999-09/30/1999
MCE 15.0	DRG 16.0	10/01/1998-06/30/1999
MCE 14.0	DRG 15.0	10/01/1997-09/30/1998

MCE Version	DRG Version	Discharge date range
MCE 13.0	DRG 14.0	10/01/1996-09/30/1997
MCE 12.0	DRG 13.0	10/01/1995-09/30/1996
MCE 11.0	DRG 12.0	10/01/1994-09/30/1995
MCE 10.0	DRG 11.0	10/01/1993-09/30/1994
MCE 9.0	DRG 10.0	10/01/1992-09/30/1993
MCE 8.0	DRG 9.0	10/01/1991-09/30/1992
MCE 7.0	DRG 8.0	10/01/1990-09/30/1991
MCE 6.0	DRG 7.0	10/01/1989-09/30/1990
MCE 5.0	DRG 6.0	10/01/1988-09/30/1989
MCE 4.0	DRG 5.0	10/01/1987-09/30/1988
MCE 3.0	DRG 4.0	10/01/1986-09/30/1987
MCE 2.0	DRG 3.0	03/01/1984-09/30/1986

Chapter 2: Program output

This chapter describes the output from the Medicare Code Editor (MCE) software program. When conflicting or incorrect information on a medical claim has been identified, the Medicare Code Editor prints a summary of the medical claim information, including the edit message that identifies the potential problem.

The following figure illustrates the MCE summary format and content of the printed claim. The illustration is intended to be an example of a claims summary that is generated. No error messages appear in the example.

When error messages occur, they appear to the right of the code in question or at the bottom of the report. The Definitions of Medicare Code Edits guide contains more information on the edits that appear in MCE software.

Title line	MEDICARE CODE EDITOR -v.37 03/16/2014 PAGE 1
Optional information	Provider Number2290000000000000000000000 VER=370 PROV= 000000000000006 PPS = 0
Edit flags	ED 1-10 = 00 00 00 00 00 00 00 00 00 00 ED11-20 = 00 00 00 00 00 00 00 00 00 00 ED21-30 = 00 00 00 00 00 00 00 00 00 00 ED31-40 = 00 00 00 00 00 00 00 00 00 00 ED41-50 = 00 00 00 00 00 00 00 00 00 00 ED51-60 = 00 00 00 00 00 00 00 00 00 00 EDT FLG = 04
Provider number	PROVIDER: 000000000000006 (PPS STATUS UNKNOWN)
Patient information	AGE: 83 SEX: 2 FEMALE DISCHARGE STATUS: -1 UNKNOWN DISCHARGE DATE: 20141023
Diagnosis code(s)	ADMITTING DIAGNOSIS S82231E DISPL OBLIQUE FX SHAFT OF R TIBIA, 7THE PRINCIPAL DIAGNOSIS S88019A COMPLETE TRAUMATIC AMP AT KNEE LEVEL, UNSP LOWER LEG, INIT 00000000000000 SECONDARY DIAGNOSES S82451A DISPLACED COMMINUTED FRACTURE OF SHAFT OF RIGHT FIBULA, INIT 00000000000000 M85552 ANEURYSMAL BONE CYST, LEFT THIGH
Procedure code(s)	PROCEDURES 0DCQXZZ EXTIRPATION OF MATTER FROM ANUS, EXTERNAL APPROACH 00000000000000

Figure 1: Sample output report

Elements in the output report

Data elements in the MCE output report are described below.

Title line

The title line includes the name of the software, the date the report was produced (mm/dd/yyyy format), the program version that processed the claim, and the report's page number. Each record is printed on a separate page.

Optional information

This section contains optional patient information from the claims record. The user may enter up to 11 lines, each 40 characters long, of optional information. For example, a hospital name and claim identifier can be reported as optional fields. The claim identifier can be a medical record number, social security number, patient's name, or any other identifier chosen by the user.

The Sample output report (page 13) shows the hospital name, patient ID, and length of stay reported in the optional fields section. Additional information (e.g., physician number) can also be reported in this section at the user's option. Information on the description of the print program pointer OPTPTR is given in chapter 5.

Provider number

The 15 character Medicare provider number is reported. The type of hospital (i.e., PPS or non-PPS) is also reported in parentheses next to the provider number.

Patient information

This section contains the required patient information from the claims record (i.e., age, sex, length of stay, discharge status, and discharge date).

Discharge status must be coded according to the UB-04 conventions. See the UB-04 discharge status codes table (page 39) for a list of valid discharge status codes.

Discharge date is displayed in the same format as the date was entered (i.e., yyyymmdd). There are no separators in the 8-character field.

The program uses the discharge date to determine which version of the software will be used to process the claim. When the discharge date is absent or invalid, an error message is displayed and the claim stops processing.

For more information on software version date ranges, see the Program versions with discharge date ranges table (page).

Diagnosis code(s)

The following diagnosis information is reported:

- Admitting diagnosis code and English description

- Principal diagnosis code and English description

- Secondary diagnosis code(s) and English descriptions

Procedure code(s)

The procedure(s) codes and English descriptions of the procedure(s) performed are reported.

Chapter 3: Installing the software

This chapter describes installation of the Medicare Code Editor (MCE) software that evaluates patient data to help identify possible errors in coding. Appendix A lists the edits contained in the program. The Definitions of Medicare Code Edits guide (PBL–011) contains more information on coding edits. The following three steps are required to download and install the software:

1. Downloading and unzipping the file to your local machine

2. Allocating and FTPing the files to the mainframe

3. Link-editing the Assembler subroutines and testing the grouper

The following description of the installation media   includes instructions on how to download the files shown in the following table, and test that the installation was successful.

Installation media

The MCE installation media contains the compiled object code for the MCE and print programs, written in the IBM OS Assembler language. The media also contains MCE tables and English description files that are an integral part of the MCE system, and the source for all the executor programs. The following table lists the files contained on the media.

Downloading the installation media files

This section gives specific information on the installation files and downloading them.

The content of the downloaded file folder is shown in the following table.

Table 2.   MCE Media contents

File	File name	LRECL	BLKSIZE	Description
1	OBJLIB	80	27920	Object library
2	SRCLIB	80	27920	Source library
3	LOADLIB	0	6233	Load library

The content of the miscellaneous folder is shown in the following table.

Table 3.   MCE miscellaneous folder contents

File	File name	LRECL	BLKSIZE	Description
1	TESTDB	1400	18200	Test database
2	DXEBC	72	27936	Diagnoses EBCDIC table
3	SGEBC	72	27936	Procedure EBCDIC table
4	CODEDSC	87	27927	Code description
5	JCL Members	80	27920	See the Sample JCL members (page 18) table.

eDownload instructions

This section contains instructions for downloading program files from the Internet or from a CD for the Medicare Code Editor (MCE) Software.

Editor program installation

All required software for executing the MCE Editor programs is contained in the folders in this directory.

This directory contains the following folders:

- Load library - MCE Editor load modules
- Object library - MCE Editor object modules
- Source library - MCE Editor source programs
- Miscellaneous
  - Test database file
  - EBCDIC files
  - Sample JCL
  - Code description

JCL library

The following steps download the JCL library.

1. Allocate a PDS on your mainframe with the following characteristics:

   - DSN = [e.g. YOURID.MCE370.I10.JCL]

   - RECFM = FB

   - LRECL = 80

   - BLKSIZE = 27920

   - SPACE = (TRK,(2,1,3),RLSE)

2. FTP in ASCII mode all of the sample JCL files listed in the following table into the pre-allocated PDS defined in step 1 above.

There is JCL to run sample COBOL interface programs. The following table lists the files contained in the miscellaneous folder.

Table 4.   Sample JCL members

Member	Function
ALTSTJCL	Run sample COBOL program (ALTTEST)
BUILDPDS	Sample JCL used for electronic download
CBTSTJCL	Run sample COBOL program (COBTEST)
COBTSTGO	Run test database, executing COBTEST load library members
ALTTSTGO	Run test database, executing ALTTEST load library members
VSAMLOAD	Load the code description file

Load library

The load library consists of the load modules for the MCE editor and print routine programs. The entire load library is optional if you intend to use the object modules.

The following table lists the members of the load library.

Table 5.   Load library members

Number	Name	Description
1	ALTTEST	Sample COBOL program (alternate interface)
2	COBTEST	Sample COBOL (standard interface) program
3	MCT370CA	Control program (alternate interface)
4	MCT370CN	Control program (standard interface)
5	MCT370PA	Print program

The load library is a sequential file, FTPLOAD.

1. Pre-allocate a sequential dataset on your mainframe to receive the file using the following file characteristics:

   - DSN = [e.g. YOURID.MCE370.I10.FTPLOAD]
   - RECFM = FB
   - LRECL = 80
   - BLKSIZE = 3120
   - SPACE = (CYL(20,1),RLSE)

2. FTP in **BINARY** mode the FTPLOAD file into the sequential dataset you allocated above.

3. Pre-allocate a load library PDS on the mainframe using the following file characteristics:

   - DSN = [e.g. YOURID.MCE370.I10.LOADLIB]
   - RECFM = U
   - BLKSIZE = 6233
   - SPACE = (CYL(20,3,2),RLSE)

4. Modify BUILDPDS in library YOURID.MCE370.I10.JCL as follows:

   - Add your JOBCARD
   - Modify dataset names as necessary

◆ INDATASET = sequential dataset that was FTP'd to the mainframe in the step above.

◆ DATASET = pre-allocated load library PDS that was created in the step above.

Note: BUILDPDS was FTP'd to the mainframe from the JCL library. This JCL executes the utility, IKJEFT01, a terminal monitor program that executes the TSO commands via batch processing. This will populate the LOAD LIBRARY from the FTP'd load sequential file. A copy is shown below.

```
//JOB CARD FOR YOUR INSTALLATION
//* ********************************************************************
//* *** RECEIVE FTP'D SEQUENTIAL FILES TO CREATE LOAD LIBRARY PDS ***
//* ********************************************************************
//BLDLOAD EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  RECEIVE INDATASET('YOURID.MCE370.I10.FTPLOAD')
          DATASET('YOURID.MCE370.I10.LOADLIB')
/*
```

5. After you modify the BUILDPDS, execute the JCL

Object library

The object library zip file contains the object library of all MCE programs. The following table lists the members of the object library.

Table 6. **Object library members**

Number	Name	Description
1	ALTTEST	Sample COBOL program (alternate interface)
2	COBTEST	Sample COBOL (standard interface) program
3	MCT370CA	The main control program (alternate interface)
4	MCT370CN	The main control program (standard interface)
5	MCT370DT	Date calculation program
6	MCT370ED	Editor program
7	MCT370PA	Print program

Number	Name	Description
8	MCT370PB	Print program
9	MCT370PC	Print program
10	MCT370RT	The editor tables
11	MCT370VS	VSAM code description program

Members 4 through 11 comprise the main MCE executor using the standard interface. Substitute MCT370CA for MCT370CN to compile the main grouper executor using the alternate (re-entrant, macro-free) interface.

All the programs contained in the object library were written in IBM Basic Assembly Language (BAL). The programs were written and tested on an IBM Z14 3906-M01(608) computer.

Object module files must be FTP'd in BINARY.

The following steps download the object library.

1. Allocate a PDS on your mainframe with the following characteristics:

   - DSN = [e.g. YOURID.MCE370.I10.OBJLIB]

   - RECFM = FB

   - LRECL = 80

   - BLKSIZE = 27920

   - SPACE = (CYL(15,1,2),RLSE)

2. FTP in BINARY mode all of the files in the object library folder into the PDS allocated in step 1 above.

Library of source programs and tables

The source zip file consists of the source for the COBOL test programs and the sources for the MCE editor and print routine programs.

The following table lists the members of the source library.

Table 7.   Source library members

Number	Name	Description
1	ALTTEST	Sample COBOL program (alternate interface)
2	COBTEST	Sample COBOL (standard interface) program

Number	Name	Description
3	MCT370CA	Control program (alternate interface)
4	MCT370CN	Control program (standard interface)
5	MCT370DT	Date calculation program
6	MCT370ED	Editor program
7	MCT370PA	Print program to the table
8	MCT370PB	Print program
9	MCT370PC	Print program
10	MCT370PR	Print macro
11	MCT370RT	Editor tables
12	MCT370VS	VSAM description file program

The following steps load the source library.

1. Allocate a PDS on your mainframe with the following characteristics:

   - DSN = [e.g. YOURID.MCE370.I10.SRCLIB]
   - RECFM = FB
   - LRECL = 80
   - BLKSIZE = 27920
   - SPACE = (CYL(30,1,4),RLSE)

2. FTP in ASCII mode all of the files in the source library folder into the PDS allocated in step 1 above.

Miscellaneous files installation

Test database file

The miscellaneous folder contains a test database that is used to verify the integrity of the installed MCE program. The format of the test database is shown in the following table.

Table 8.   Test database format

Field#	Location	Name	Description
1	1-3	AGE	Age
2	4	SEX	Sex
3	5-6	DSTAT	Discharge Status
4	7-11	LOS	Length of stay
5	12-19	DDATE	Discharge date
6	20-227	DX	Diagnoses (26)
7	228-402	PROC	Procedures (25)
8	403-417	PROV	Provider
9	418-418	PPS	PPS
10	419-483	FILLER	Filler
11	484-486	VERSION	Version
12	487-487	ADXFLAG	ADXFLAG
13	488-837	DXFLAGS	DXFLAGS
14	838-1262	SGFLAGS	SGFLAGS
15	1263-1400	MCEBUFF	MCEBUFF

The following steps load the test database file to the mainframe.

1. Allocate a sequential file (PS) on your mainframe using the attributes below.

    ▪   DSN= YOURID.MCE370.I10.TESTDB

    ▪   RECFM=FB

    ▪   LRECL=1400

    ▪   BLKSIZE=18200

    ▪   SPACE=(CYL,(18,1),RLSE)

2. FTP the TESTDB file from the miscellaneous folder in ASCII mode into a mainframe sequential dataset, " YOURID.MCE370.I10.TESTDB."

Source English description VSAM file

The CODEDSC file is written as a key-sequenced data set, and the input file is sorted. This file replaces any English description files that may have been installed for other versions of MCE software. It combines all codes into one file, and has an additional identifier as part of the key.

Downloading the description file is optional. The report programs that use the CODEDSC file give you the option to bypass descriptions (see DSCPTR narrative in chapter 5).

The following is an example of how to load the English description file. The layout of the description file follows the example.

```
// JOB CARD FOR YOUR INSTALLATION
/*SETUP CARD FOR INSTALLATION
// EXEC PGM=IDCAMS,REGION=1024K
//SYSPRINT DD SYSOUT=*
//INPUT DD DSN=YOURID.MCE370.I10.CODEDSC,DISP=SHR
//SYSIN DD *
    DEFINE CLUSTER (NAME(YOURID.MCE370.I10.VSFILE) -
                    VOLUMES(DISKVOLID) -
                    CISZ(2048) -
                    RECORDS(176997)) -
            DATA    (KEYS(11 0) -
                    RECORDSIZE(87 87) -
                    NAME(YOURID.MCE370.I10.VSFILE.DATA)) -
            INDEX   (NAME(YOURID.MCE370.I10.VSFILE.INDEX))
    REPRO INFILE(INPUT) -
          OUTDATASET(YOURID.MCE370.I10.VSFILE)
/*
```

Layout of the description file

The layout of the description file follows:

- The first byte indicates whether the code is an I9 code (9) or I10 (0).

- The next byte indicates whether the code is a diagnosis (1) or procedure (2).

- The next seven bytes (bytes 2-8) contain the code.

- The next two bytes contain the sequence number. When sequence number equals 00, the code description is valid for all MCE versions (first to current).

- The next eight bytes contain the "from" date.

- The next eight bytes contain the "to" date.

- The remaining bytes contain the code description.

An example of the description file layout is shown below.

Table 9. **Description file layout**

Field	Pos	Length	Description
Set	1	1	0=ICD-10-CM, 9=ICD-9-CM
Code Type	2	1	1=diagnosis, 2=procedure
Code	3	7	diagnosis or procedure code
Sequence	10	2	sequence number
From Date	12	8	first date code desc is valid
To Date	20	8	last date which code desc is valid
Description	28	60	code description

The following steps send the Source description file to the mainframe.

1. Allocate a sequential file (PS) on your mainframe using the attributes below. It is also shown for the SYSUT2 DD card in JCL library member **VSAMLOAD**.

    ▪ DSN=YOURID.MCE370.I10.CODEDSC

    ▪ RECFM=FB

    ▪ LRECL=87

    ▪ BLKSIZE=27927

    ▪ SPACE=(CYL,(20,2),RLSE)

2. FTP in ASCII mode the CODEDSC file from the miscellaneous folder to the mainframe YOURID.MCE370.I10.CODEDSC.

Diagnosis EBCDIC Table

The tables that drive the MCE are expressed in Extended Binary Coded Decimal Interchange Code (EBCDIC) as two files:

Diagnosis table. Contains one row per diagnosis code, with diagnosis attributes.

In the layouts in this section, each field is identified by its position (first column is position 1) and length in a table row. Criteria fields (length 1) are one when the criteria are met and zero otherwise.

The following table contains the EBCDIC Diagnosis table layout.

Table 10.   Diagnosis table

Name	Pos	Len	Description
codetype	1	1	I9 (9) or I10 (0)
dx	2	7	diagnosis code
effdate	9	8	edit effective date
termdate	17	8	edit termination date
pediatric	25	1	diagnosis for pediatric only
msp	26	1	medicare as secondary payer
maternity	27	1	diagnosis for maternity only
nonspecific	28	1	nonspecific diagnosis
newborn	29	1	diagnosis for newborn only
manifestation	30	1	manifestation
female	31	1	diagnosis for female only
male	32	1	diagnosis for male only
mdc08	33	1	MDC 8
reqsdx	34	1	reqires secondary diagnosis
ncov2	35	1	ncov2
qadm	36	1	questionable admission
unacceptable	37	1	unacceptable diagnosis
adult	38	1	diagnosis for adult only
cc	39	1	cc
ncov3	40	1	ncov3
ncov4	41	1	ncov4
ncov5	42	1	ncov5
ncov2agelt78	43	1	ncov2agelt78
ncov2agelt64	44	1	ncov2agelt64
ncov6	45	1	ncov6
ncov7	46	1	ncov7
ncov89	47	1	ncov89

Name	Pos	Len	Description
diabtypeI	48	1	diabetes
UNUSED	49	1	UNUSED
UNUSED	50	1	UNUSED
clintrial	51	1	clinical trial
wrnproc	52	1	wrong procedure performed
ecodepdx	53	1	ecodepdx
ncov_z302	54	1	ncov_z302
delout	55	1	outcome of delivery
UNUSED	56	17	UNUSED

The following steps load the Diagnosis EBCDIC table to the mainframe.

1. Allocate a sequential dataset using the following attributes:

   - DSN=YOURID.MCE370.I10.**DXEBC**
   - LRECL=72
   - BLKSIZE=27936
   - RECFM=FB
   - SPACE=(CYL(10),RLSE)

2. FTP the DXEBC file from the miscellaneous folder in ASCII mode into a mainframe sequential dataset, "YOURID.MCE370.I10.**DXEBC**".

Procedure EBCDIC table

Procedure table. Contains one row per procedure code, with procedure attributes.

In the layouts in this section, each field is identified by its position (first column is position 1) and length in a table row. Criteria fields (length 1) are one when the criteria are met and zero otherwise.

The following table contains the EBCDIC Procedure table.

Table 11.   Procedure table

Name	Pos	Len	Description
codetype	1	1	I9 (9) or I10 (0)
sg	2	7	procedure code

Name	Pos	Len	Description
effdate	9	8	edit effective date
termdate	17	8	edit termination date
noncovered	25	1	noncovered procedure
biopsy	26	1	biopsy
UNUSED	27	1	UNUSED
bilateral	28	1	bilateral procedure
nonspecific	29	1	nonspecific OR procedure
or	30	1	or indicator
female	31	1	procedure for female only
male	32	1	procedure for male only
kidneyxp	33	1	kidney transplant
ncov8	34	1	ncov8
ncov9	35	1	ncov9
ncov6	36	1	ncov6
ncov7	37	1	ncov7
ncov45	38	1	ncov45
ncov2	39	1	ncov2
ncov3	40	1	ncov3
I9 - lcov_lvrs I10 - lcov	41	1	I9 - limited coverage - LVRS I10 - limited coverage
I9 - lcov_lungxp I10 - UNUSED	42	1	I9 - limited coverage - lung transplant I10 - UNUSED
I9 - lcov_heartlungxl I10 - UNUSED	43	1	I9 - limited coverage - heart/lung transplant I10 - UNUSED
I9 - lcov_heartxp I10 - UNUSED	44	1	I9 - limited coverage - heart transplant I10 - UNUSED
I9 - lcov_heartsys I10 - UNUSED	45	1	I9 - limited coverage - heart system transplant I10 - UNUSED

Name	Pos	Len	Description
I9 - lcov_intxp I10 - UNUSED	46	1	I9 - limited coverage - intestine transplant I10 - UNUSED
I9 - lcov_liver I10 - UNUSED	47	1	I9 - limited coverage - liver transplant I10 - UNUSED
UNUSED	48	1	UNUSED
ncov10a	49	1	ncov10a
ncov10b	50	1	ncov10b
ncov10c	51	1	ncov10c
ncov11	52	1	ncov11
ncov12agele60	53	1	ncov12agele60
I9 - lcov_kidneyxp I10 - UNUSED	54	1	I9 - limited coverage - kidney transplant I10 - UNUSED
I9 - lcov_pancreasxp I10 - UNUSED	55	1	I9 - limited coverage - pancreas transplant I10 - UNUSED
ncov13a	56	1	ncov13a
ncov13b	57	1	ncov13b
ncov45a	58	1	ncov45a
I9 - lcov_artheartxp I10 - UNUSED	59	1	I9 - limited coverage - artificial heart transplant I10 - UNUSED
lcov_artheartxpa	60	1	limited coverage - artificial heart transplant
lcov_artheartxpb	61	1	limited coverage - artificial heart transplant
los	62	1	length of stay
ncov_z302	63	1	ncov_z302
UNUSED	64	1	UNUSED
csect	65	1	cesarean section
vagdel	66	1	vaginal delivery

Name	Pos	Len	Description
UNUSED	67	6	UNUSED

The following steps load the Procedure EBCDIC table to the mainframe.

1. Allocate a sequential dataset using the following attributes:

   - DSN=YOURID.MCE370.I10.**SGEBC**

   - LRECL=72

   - BLKSIZE=27936

   - RECFM=FB

   - SPACE=(CYL(10),RLSE)

2. FTP the SGEBC file from the miscellaneous folder in ASCII mode into a mainframe sequential dataset, "YOURID.MCE370.I10.**SGEBC**".

Running the test program

Note: We strongly recommend running the test program to ensure that the software is correctly installed.

A copy of the COBOL test program and the test database are included on the media to allow you to test the results of the installation procedure. The following is an example of a compile-link-go to execute the COBOL test program.

If you have not installed the ICD-10 description file, change line 58 in the COBOL test program to read:

❐ 77 DSCFLAG PIC S9(8) COMP VALUE IS +0.

Also, exclude the marked (†) line from the example below.

```
//JOB CARD FOR YOUR INSTALLATION                                 00001000
//* *****************************************************        00002000
//* THIS JOB IS USED TO COMPILE, LINK AND RUN THE MCE            00003400
//* COBOL TEST PROGRAM, COBTEST.                                 00004000
//*                                                              00005000
//* BOTH OBJECT AND LOAD MODULES ARE TEMPORARY.                  00005100
//* *****************************************************        00006000
//COBUCLG PROC SYSOUT='*'                                        00007000
//*    COBOL FOR MVS COMPILE AND LINK                            00008000
//COB     EXEC  PGM=IGYCRCTL,PARM='RENT,NODYNAM'                 00009000
//STEPLIB  DD   DSN=IGYV3R4.SIGYCOMP,DISP=SHR                    00009100
//SYSLIB   DD   DSN=YOURID.&PROD..SRCLIB,DISP=SHR                00009200
//SYSPRINT DD   SYSOUT=&SYSOUT                                   00009300
//SYSIN    DD   DSN=YOURID.&PROD..SRCLIB(COBTEST),DISP=SHR       00009400
//SYSUT1   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00009500
//SYSUT2   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00009600
//SYSUT3   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00009700
//SYSUT4   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00009800
//SYSUT5   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00009900
//SYSUT6   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00010000
//SYSUT7   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00010100
//SYSLIN   DD   DSN=&&LOADSET,UNIT=SYSDA,DISP=(MOD,PASS),        00010200
//              SPACE=(TRK,(3,3)),DCB=BLKSIZE=800                00010300
//*                                                              00010400
//LKED    EXEC  PGM=IEWL,PARM='LIST,MAP,AMODE=31,RMODE=ANY',     00010500
//              COND=(5,LT,COB)                                  00010600
//SYSLIB   DD   DSN=CEE.SCEELKED,DISP=SHR                        00010700
//SYSLMOD  DD   DSN=&&GOSET(COBTEST),UNIT=SYSDA,DISP=(,PASS),    00010800
//              SPACE=(CYL,(5,1,5))                              00010900
//SYSUT1   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))                     00011000
//SYSPRINT DD   SYSOUT=&SYSOUT                                   00011100
//SYSLIN   DD   DSN=&&LOADSET,DISP=(OLD,DELETE)                  00011200
//         DD   DDNAME=SYSIN                                     00011300
//OBJECT   DD DSN=YOURID.&PROD..OBJLIB,DISP=OLD                  00011400
//*                                                              00011500
//GO      EXEC  PGM=COBTEST,COND=((5,LT,COB),(5,LT,LKED))        00012000
//STEPLIB  DD DISP=SHR,DSN=&&GOSET                               00012100
//         DD DISP=SHR,DSN=CEE.SCEERUN                           00012200
//INFILE   DD DSN=YOURID.&PROD..TESTDB,DISP=SHR                  00012300
//SYSPRINT DD SYSOUT=&SYSOUT                                     00012400
//MCE37DSC DD DSN=YOURID.&PROD..VSFILE,DISP=SHR †                00012500
//RPTFILE  DD SYSOUT=&SYSOUT,DCB=(RECFM=FA,BLKSIZE=99,BUFNO=1)   00012600
//         PEND                                                  00012700
//*                                                              00012800
//PROG1    EXEC COBUCLG,PROD=MCE370.I10                          00012900
//*                                                              00013000
//LKED.SYSIN DD *                                                00013100
 INCLUDE OBJECT(MCT370CN,MCT370ED,MCT370RT)                      00013200
 INCLUDE OBJECT(MCT370PA,MCT370VS,MCT370DT)                      00013300
 ENTRY COBTEST                                                   00014000
 NAME COBTEST                                                    00014100
/*                                                               00017800
```

If the test is successful, all return results should match the expected results on the test database input, and the report output should match the printout shown below. There should be 10065 records processed. The test should take less than 1 CPU second.

Note that the DISCHARGE DATE output field displays in the same format as the date is entered (yyyymmdd).

```
MEDICARE CODE EDITOR - V37.0                07/10/2019 PAGE     1
LAST RECORD
PROVIDER: Provider Number  (NON-PPS)
AGE:   35
LOS: 00003
SEX: 2 FEMALE
DISCHARGE STATUS: 01 HOME
DISCHARGE DATE: 20191001
ADMITTING DIAGNOSIS
          NO DESCRIPTION                                         0
PRINCIPAL DIAGNOSIS
 A020     SALMONELLA ENTERITIS                                   00000000000000
NO SECONDARY DIAGNOSES
PROCEDURES
 F00Z6ZZ  SPEECH AND/OR LANGUAGE SCREENING ASSESSMENT            00000000000000000
 10D00Z0  EXTRACTION OF PRODUCTS OF CONCEPTION, HIGH, OPEN APPROACH  00000001000000000
```

Chapter 4: Running the program

To execute the Medicare Code Editor (MCE) program, you must write an interface program that will perform the following functions:

- Read the input file records.

- Construct the MCE control block (see chapter 5).

- Move diagnoses and procedures into contiguous locations if they were not recorded that way on input.

- Recode the discharge status if the coding scheme is not UB-04 standard.

- Call the MCE program, and optionally, one of the report programs.

- Write output records, if applicable.

Note that the MCE system assumes that provider number, PPS indicator, age, sex, discharge status, date, length of stay, diagnoses and procedures are all EBCDIC (character) data.

Calling the editor

Once the interface program is done and specifies the pointers in the control block where the input data is located, the MCE program is invoked by calling the controller program MCT370CN that determines the MCE version to be called based on the date of discharge.

MCT370CN then calls the appropriate MCE version and returns control to your interface program. If a date is not valid, or is not within the range of the MCE version 37.0, an error message is displayed and the claim stops processing.

The process is then repeated for each record to be edited. At the call to the control program, general purpose Register 1 must be set to point to the control block. The control block is discussed in Chapter 5 (page).

JCL for executing the program

By implementing the CALL…USING statement, COBOL programmers will have Register 1 set by the CALL statement.

The following figure is an example of compile-link-go JCL to edit only.

For an example of JCL to edit and call the report program, refer to the Sample JCL for edit-print procedure (page).

If you have not installed the ICD-10 description file, exclude the marked (†) line from the JCL in the Sample JCL for edit-print procedure (page 35).

```
//JOB CARD FOR YOUR INSTALLATION
//* *******************************************************
//* THIS JOB IS USED TO COMPILE, LINK AND RUN THE MCE
//* COBOL TEST PROGRAM, COBTEST.
//*
//* BOTH OBJECT AND LOAD MODULES ARE TEMPORARY.
//* *******************************************************
//COBUCLG PROC SYSOUT='*'
//*    COBOL FOR MVS COMPILE AND LINK
//COB     EXEC  PGM=IGYCRCTL,PARM='RENT,NODYNAM'
//STEPLIB  DD  DSN=IGYV3R4.SIGYCOMP,DISP=SHR
//SYSLIB   DD  DSN=YOURID.&PROD..SRCLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSIN    DD  DSN=YOURID.&PROD..SRCLIB(COBTEST),DISP=SHR
//SYSUT1   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT2   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT3   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT4   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT5   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT6   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT7   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSLIN   DD  DSN=&&LOADSET,UNIT=SYSDA,DISP=(MOD,PASS),
//             SPACE=(TRK,(3,3)),DCB=BLKSIZE=800
//*
//LKED    EXEC  PGM=IEWL,PARM='LIST,MAP,AMODE=31,RMODE=ANY',
//             COND=(5,LT,COB)
//SYSLIB   DD  DSN=CEE.SCEELKED,DISP=SHR
//SYSLMOD  DD  DSN=&&GOSET(COBTEST),UNIT=SYSDA,DISP=(,PASS),
//             SPACE=(CYL,(5,1,5))
//SYSUT1   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSLIN   DD  DSN=&&LOADSET,DISP=(OLD,DELETE)
//         DD  DDNAME=SYSIN
//OBJECT   DD DSN=YOURID.&PROD..OBJLIB,DISP=OLD
//*
//GO      EXEC  PGM=COBTEST,COND=((5,LT,COB),(5,LT,LKED))
//STEPLIB  DD DISP=SHR,DSN=&&GOSET
//         DD DISP=SHR,DSN=CEE.SCEERUN
//INFILE   DD DSN=YOURID.&PROD..TESTDB,DISP=SHR
//SYSPRINT DD SYSOUT=&SYSOUT
//RPTFILE  DD SYSOUT=&SYSOUT,DCB=(RECFM=FA,BLKSIZE=99,BUFNO=1)
//         PEND
//*
//PROG1    EXEC COBUCLG,PROD=MCE370.I10
//*
//LKED.SYSIN DD *
 INCLUDE OBJECT(MCT370CN,MCT370ED,MCT370RT)
 ENTRY COBTEST
 NAME COBTEST
/*
```

```
//JOB CARD FOR YOUR INSTALLATION
//* *******************************************************
//* THIS JOB IS USED TO COMPILE, LINK AND RUN THE MCE
//* COBOL TEST PROGRAM, COBTEST.
//*
//* BOTH OBJECT AND LOAD MODULES ARE TEMPORARY.
//* *******************************************************
//COBUCLG PROC SYSOUT='*'
//*    COBOL FOR MVS COMPILE AND LINK
//COB     EXEC  PGM=IGYCRCTL,PARM='RENT,NODYNAM'
//STEPLIB  DD  DSN=IGYV3R4.SIGYCOMP,DISP=SHR
//SYSLIB   DD  DSN=YOURID.&PROD..SRCLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSIN    DD  DSN=YOURID.&PROD..SRCLIB(COBTEST),DISP=SHR
//SYSUT1   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT2   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT3   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT4   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT5   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT6   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT7   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSLIN   DD  DSN=&&LOADSET,UNIT=SYSDA,DISP=(MOD,PASS),
//             SPACE=(TRK,(3,3)),DCB=BLKSIZE=800
//*
//LKED    EXEC  PGM=IEWL,PARM='LIST,MAP,AMODE=31,RMODE=ANY',
//             COND=(5,LT,COB)
//SYSLIB   DD  DSN=CEE.SCEELKED,DISP=SHR
//SYSLMOD  DD  DSN=&&GOSET(COBTEST),UNIT=SYSDA,DISP=(,PASS),
//             SPACE=(CYL,(5,1,5))
//SYSUT1   DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSLIN   DD  DSN=&&LOADSET,DISP=(OLD,DELETE)
//         DD  DDNAME=SYSIN
//OBJECT   DD DSN=YOURID.&PROD..OBJLIB,DISP=OLD
//*
//GO      EXEC  PGM=COBTEST,COND=((5,LT,COB),(5,LT,LKED))
//STEPLIB  DD DISP=SHR,DSN=&&GOSET
//         DD DISP=SHR,DSN=CEE.SCEERUN
//INFILE   DD DSN=YOURID.&PROD..TESTDB,DISP=SHR
//SYSPRINT DD SYSOUT=&SYSOUT

//MCE37DSC DD DSN=YOURID.&PROD..VSFILE,DISP=SHR †
//RPTFILE  DD SYSOUT=&SYSOUT,DCB=(RECFM=FA,BLKSIZE=99,BUFNO=1)
//         PEND
//*
//PROG1    EXEC COBUCLG,PROD=MCE370.I10
//*
//LKED.SYSIN DD *
 INCLUDE OBJECT(MCT370CN,MCT370ED,MCT370RT)
 INCLUDE OBJECT(MCT370PA,MCT370VS,MCT370DT)
 ENTRY COBTEST
 NAME COBTEST
/*
```

Using the alternate interface

The alternate editor control program, (MCT370CA) operates the same as the standard editor control program (MCT370CN) except that it does not contain any macros and is written to be

re-entrant, so it should run in a wider variety of mainframe environments. Whereas the standard interface uses GETMAINS to obtain a 20,000 byte work area, the alternate interface requires that the calling program provide the work area. It must do so by providing two additional addresses in the list pointed to by general register 1 (see the Control block and elements of MCE system table (page 37).)

The following table gives the additional work area parameters required by the alternate interface.

Table 12.   Work area parameters

Element number	Editor pointers	Full word pointer to...
16	WORKAREA	A buffer of at least 20,000 bytes.
17	WORKSIZE	4-byte binary (PIC 9(8) comp) field containing the actual length in bytes of the work area. The value of this field should not be less than 20,000 bytes, though larger values are acceptable.

To use the alternate interface, substitute MCT370CA for MCT370CN and provide these two extra parameters. See the COBOL program ALTTEST, provided in the source library, for an example of how to set up a work area and pass it to MCT370CA.

Assembler programmers should note that the length of the work area is not given in the full word at element number 17 but rather a pointer to the full word containing the length is given at element number 17.

Sample JCL for running ALTTEST may be created by modifying the JCL shown in the Sample JCL for edit-only procedure (page 34) or the Sample JCL for edit-print procedure (page 35). To modify the JCL, change all occurrences of COBTEST to ALTTEST and change MCT370CN to MCT370CA.

Chapter 5: The control block

The control block is a block of fullwords which serves as the main reference point for each of the programs in the Medicare Code Editor (MCE) system. Each program uses the control block to locate required input data and to establish the locations of return information.

The following table lists the control block and elements required for each system component. The first 15 elements are the same for both the editor and the print programs. The pointers from element number 16 on have different meanings depending on which component is being called.

Table 13.   Control block and elements of MCE system

Element Number	Editor pointers	Print program pointers
1	DXPTR	DXPTR
2	NDXPTR	NDXPTR
3	PRPTR	PRPTR
4	NPRPTR	NPRPTR
5	AGEPTR	AGEPTR
6	SEXPTR	SEXPTR
7	DSTATPTR	DSTATPTR
8	PROVPTR	PROVPTR
9	PPSPTR	PPSPTR
10	LOSPTR	LOSPTR
11	DATEPTR	DATEPTR
12	VPTR	VPTR
13	ADXFLGPTR	ADXFLGPTR
14	DXFLGPTR	DXFLGPTR
15	PRFLGPTR	PRFLGPTR
16	BUFFPTR	BUFFPTR
17	n/a	DSCPTR
18	n/a	OPTPTR1
19	n/a	OPTPTR2

Element Number	Editor pointers	Print program pointers
20	n/a	OPTPTR3
21	n/a	OPTPTR4
22	n/a	OPTPTR5
23	n/a	OPTPTR6
24	n/a	OPTPTR7
25	n/a	OPTPTR8
26	n/a	OPTPTR9
27	n/a	OPTPTR10
28	n/a	OPTPTR11

The following pages explain the pointers listed in the above table. Bit values, where documented, are numbered in a left-to-right order, with bit 0 being the left-most bit.

DXPTR

Address of the area containing contiguous diagnosis codes. Each diagnosis must be left justified and blank filled in an 8-byte field. The eighth byte represents the POA indicator. The first of these codes is presumed to be the admitting diagnosis and the second is presumed to be the principal diagnosis. These codes must be present.

NDXPTR

Address of a fullword containing the count of diagnoses entered into the area pointed to by DXPTR. Do not count blank space after the last filled diagnosis. The actual number of valid diagnoses must be entered. The editor only uses diagnoses up to the first blank field it finds and will reduce the number you give it accordingly. The number must be a binary (PIC 9(8) COMP) fullword. This must be a value of at least 2 (admit diagnosis and principal diagnosis), as at least two diagnoses must be present. The maximum number of codes allowed is 26. If greater than 26, the software uses only the first 26 fields in the buffer and ignores the rest.

SGPTR

Address of the area containing contiguous procedure codes. Each code must be seven bytes. Procedures are handled in the same manner as diagnoses by the system.

NSGPTR

Address of a fullword containing the number of procedure codes. This is the maximum number that the area pointed to by SGPTR can hold. The number must be a binary (PIC 9(8) COMP) fullword. The maximum number of codes allowed is 25.

AGEPTR

Address of a 3-byte variable containing the numeric age in years. The variable must be right-adjusted, with either zero or blank filling allowed. Values in the range 0-124 are valid.

SEXPTR

Address of a 1-byte variable containing the numeric sex. The variable must contain the value 1 for males, 2 for females or 0 for unknown.

DSTATPTR

Address of a 2-byte variable containing the numeric discharge status code, which must be coded according to the UB-04 code scheme. If discharge status is not available, DSTATPTR should point to a constant with a value of 00. The following table lists the valid UB-04 discharge status codes in the software.

Table 14.   **UB-04 discharge status codes**

Code	Description
00	Unknown
01	Home, self care (routine)
02	Short term hospital
03	SNF
04	ICF (valid until 09/30/09) Cust/supp care (effective 10/01/09)
05	Other facility (valid until 03/31/08) Canc/child hosp (effective 04/01/08)
06	Home health service

Code	Description
07	Left against medical advice
08	Home IV service (valid until 09/30/05)
20	Died
21	Court/law enfrc (added 10/01/09)
30	Still a patient
43	Fed hospital (added 10/01/03)
50	Hospice - home
51	Hospice - medical facility
61	Swing bed (added 10/01/01)
62	Rehab fac/unit (added 10/01/01)
63	LTC hospital (added 10/01/01)
64	Nursing facility-Medicaid certified (added 10/01/02)
65	Psych hosp/unit (added 10/01/03)
66	Critical access hospital (added 10/01/05)
69	Designated Disaster Alternative Care Site (added 10/01/13)
70	Oth institution (effective 04/01/08)
71	OP services-other facility (10/01/01–09/30/03 only)
72	OP services-this facility (10/01/01–09/30/03 only)
81	Home-Self care w Planned Readmission (added 10/01/13)
82	Home-Self care w Planned Readmission (added 10/01/13)
83	SNF w Planned Readmission (added 10/01/13)
84	Cust/supp care w Planned Readmission (added 10/01/13)
85	Canc/child hosp w Planned Readmission (added 10/01/13)
86	Home Health Service w Planned Readmission (added 10/01/13)
87	Court/law enfrc w Planned Readmission (added 10/01/13)
88	Federal Hospital w Planned Readmission (added 10/01/13)
89	Swing Bed w Planned Readmission (added 10/01/13)
90	Rehab Facility/ Unit w Planned Readmission (added 10/01/13)

Code	Description
91	LTCH w Planned Readmission (added 10/01/13)
92	Nursg Fac-Medicaid Cert w Planned Readmiss (added 10/01/13)
93	Psych Hosp/Unit w Planned Readmission (added 10/01/13)
94	Crit Acc Hosp w Planned Readmission (added 10/01/13)
95	Oth Institution w Planned Readmission (added 10/01/13)

PROVPTR

Address of an area containing the 15-byte Medicare provider number. This information is required for the summary record. Refer to BUFFPTR above for a detailed explanation.

PPSPTR

Address of a 1-byte numeric variable which must be set to one of the values shown in the following table. This information is required for the summary record. Refer to BUFFPTR above for details.

Table 15.   PPS values

Value	Description
0	PPS status unknown
1	PPS provider
2	Non-PPS provider

LOSPTR

LOSPTR Address of a 5-byte variable containing the numeric length of stay. The variable must be right-adjusted, with either zero or blank filling allowed. Values in the range 0-45291 are valid.

DATEPTR

Address of the calendar discharge date (yyyymmdd) that is used for determining which MCE version to call. Each of the three components of the date must be numeric and left zero-filled. There are no separators. If this date is not valid, the claim stops processing, and the edit flag (see BUFFPTR) will be set to 4. Since the date edit is not a part of the "official" MCE edits, there is no accumulator provided. The flag is included for your convenience only.

VPTR

Address of a 3-byte area (Pic 9(3)) where the version identification number is placed by the program. This area contains the number of the MCE version that was run. Selection of an MCE version is determined by the date passed in DATEPTR. The following table lists the versions and date ranges.

Table 16.   Versions

MCE version	Date range
37.0 (ICD-10)	10/01/2019 – 09/30/2020
36.0 (ICD-10)	10/01/2018 – 09/30/2019
35.0 (ICD-10)	10/01/2017 – 09/30/2018
34.0 (ICD-10)	10/01/2016 – 09/30/2017
33.0 (ICD-10)	10/01/2015 – 09/30/2016
32.0	10/01/2014 – 09/30/2015
31.0	10/01/2013 – 09/30/2014
30.0	10/01/2012 – 09/30/2013
28.0	10/01/2011 – 09/30/2012
27.0	10/01/2010 – 09/30/2011
26.0	10/01/2009 – 09/30/2010
25.0	10/01/2008 – 09/30/2009
24.1	04/01/2008 – 09/30/2008
24.0	10/01/2007 – 03/31/2008
23.0	10/01/2006 – 09/30/2007
22.0	10/01/2004 – 09/30/2005
21.0	10/01/2004 – 09/30/2005

MCE version	Date range
20.0	10/01/2003 – 09/30/2004
19.0	10/01/2002 – 09/30/2003
18.0	10/01/2001 – 09/30/2002
17.0	10/01/2000 – 09/30/2001
16.0	10/01/1999 – 09/30/2000
15.1	07/01/1999 – 09/30/1999
15.0	10/01/1998 – 06/30/1999
14.0	10/01/1997 – 09/30/1998
13.0	10/01/1996 – 09/30/1997
12.0	10/01/1995 – 09/30/1996
11.0	10/01/1994 – 09/30/1995
10.0	10/01/1993 – 09/30/1994
9.0	10/01/1992 – 09/30/1993
8.0	10/01/1991 – 09/30/1992
7.0	10/01/1990 – 09/30/1991
6.0	10/01/1989 – 09/30/1990
5.0	10/01/1988 – 09/30/1989
4.0	10/01/1987 – 09/30/1988
3.0	10/01/1986 – 09/30/1987
2.0	03/01/1984 – 09/30/1986

ADXFLGPTR

Address of a 1-byte variable containing the admitting diagnosis edit. The variable will contain the value 0 if the admitting diagnosis is valid or 1 if the admitting diagnosis is invalid.

DXFLGPTR

Address of a 350-byte field containing the diagnosis code edits starting with the principal diagnosis. 14 bytes for each of 25 diagnosis codes. The variable will contain the value 0 if the edit was not applicable or 1 if the edit was applicable. The following table provides a description for each of the 14 edit bytes.

Table 17.   MCE diagnosis code edits

Byte	MCE diagnosis edit
1	Invalid diagnosis code
2	Sex conflict
3	Age conflict
4	Questionable admission
5	Manifestation code as principal diagnosis
6	Nonspecific principal diagnosis
7	External cause codes as principal diagnosis
8	Unacceptable principal diagnosis
9	Duplicate of principal diagnosis
10	Medicare is secondary payer
11	Requires secondary diagnosis
12	Type of age conflict: 0 = No age conflict 1 = Newborn 2 = Pediatric 3 = Maternity 4 = Adult
13	POA indicator invalid or missing (for future use)
14	Wrong procedure performed

PRFLGPTR

Address of a 425-byte field containing the procedure code edits. 17 bytes for each of 25 procedure codes. The variable will contain the value 0 if the edit was not applicable or 1 if the edit was applicable. The following table provides a description for each of the 17 edit bytes.

Table 18.   MCE procedure code edits

Byte	MCE procedure edit
1	Invalid procedure code
2	Sex conflict
3	Nonspecific O.R. procedure
4	Open biopsy check
5	Non-covered procedure
6	Bilateral procedure
7	I9 - Limited coverage – Lung volume reduction surgery (LVRS) I10 - Limited coverage
8	I9 - Limited coverage – Lung transplant I10 - Questionable Obstetric Admission
9	I9 - Limited coverage – Combination heart/lung transplant I10 - UNUSED
10	I9 - Limited coverage – Heart transplant I10 - UNUSED
11	I9 - Limited coverage – Implant of heart assist system I10 - UNUSED
12	I9 - Limited coverage – Intestine/multi-visceral transplant I10 - UNUSED
13	I9 - Limited coverage – Liver transplant I10 - UNUSED
14	I9 - Limited coverage – Kidney transplant I10 - UNUSED
15	I9 - Limited coverage – Pancreas transplant I10 - UNUSED

Byte	MCE procedure edit
16	I9 - Limited coverage – Artificial heart transplant I10 - UNUSED
17	Procedure inconsistent with LOS

BUFFPTR

Address of a 138-byte buffer (MCEBUFF) that must be allocated by your interface program. The software will produce a summary of errors for each record and will put the summarized information in this buffer, along with the provider number, PPS indicator, and edit flag. The following table is a description of the buffer.

The accumulators at positions 17 through 62, and 69 through 76, contain the counts of the number of occurrences of each of the error conditions related to diagnoses and/or procedures. Those for which the count cannot exceed 1 are designated with an asterisk (*).

Table 19.   Buffer description

Byte	Datatype	Description
1	pic 9(15).	Medicare provider number
16	pic 9.	PPS indicator
17	pic 99.	Invalid diagnosis or procedure code
19	pic 99.	Sex conflict
21	pic 99.	Age conflict
23	pic 99.	* Questionable admission
25	pic 99.	* Manifestation as principal dx
27	pic 99.	* Non-specific principal dx (versions 2.0-23.0 only)
29	pic 99.	* External causes of morbidity codes as principal diagnosis
31	pic 99.	* Unacceptable principal dx
33	pic 99.	Duplicate of principal dx
35	pic 99.	MSP alert (versions 15.0–17.0 only)

Byte	Datatype	Description
37	pic 99.	Principal dx requires secondary dx
39	pic 99.	Non-specific procedure (versions 15.0-23.0 only)
41	pic 99.	Open biopsy check (versions 22.0-26.0 only)
43	pic 99.	Non-covered procedure
45	pic 99.	*Bilateral procedure (not valid in I-10)
47	pic 99.	I9 - LVRS - Limited coverage I10 - Limited coverage
49	pic 99.	I9 - Lung transplant - Limited coverage I10 - Questionable Obstetric Admission
51	pic 99.	I9 - Combo heart/lung transpl - Limited coverage (not valid in I-10) I10 - UNUSED
53	pic 99.	I9 - Heart transplant - Limited coverage I10 - UNUSED
55	pic 99.	I9 - Implantable hrt assist - Limited coverage I10 - UNUSED
57	pic 99.	I9 - Intest/M. visceral transpl - Limited coverage I10 - UNUSED
59	pic 99.	I9 - Liver transplant - Limited coverage I10 - UNUSED
61	pic 99.	* Invalid admit dx
63	pic 99.	* Invalid age (not between 0 and 124 years)
65	pic 99.	* Invalid sex (not 1 or 2)
67	pic 99.	* Invalid or missing discharge status code **Note:** Some discharge status codes are not valid for all date ranges. See the UB-04 discharge status codes table (page 39).
69	pic 99.	I9 - Kidney transplant - Limited coverage I10 - UNUSED

Byte	Datatype	Description
71	pic 99.	I9 - Pancreas transplant - Limited coverage I10 - UNUSED
73	pic 99.	POA indicators invalid or missing (for future use)
75	pic 99.	I9 - Artificial heart transplant - Limited coverage I10 - UNUSED
77	pic 99.	Wrong procedure performed
79	pic 99.	Procedure inconsistent with LOS
81	pic x(56)	Filler
137	pic 99.	MCE edit flag

The accumulators at positions 45 and 63 through 68 will have a count of 1 if the error is present, and 0 otherwise. They are effectively the flag bytes for these errors.

Flag values

The MCE edit flag is set by the software to values shown in the following table.

Table 20.   Edit flag values

Value	Description
0	No edits
1	Pre-payment edits Non-covered procedure Questionable admission Age conflict Sex conflict Invalid diagnosis and procedure code External causes of morbidity codes as principal diagnosis Manifestation as principal diagnosis Unacceptable principal diagnosis Invalid age, sex or discharge status Duplicate of PDX, Requires secondary dx Limited coverage Wrong procedure performed Procedure inconsistent with LOS
2	Post-payment edits Non-specific diagnosis Non-specific procedure Bilateral procedure Biopsy check MSP alert
3	Both pre-payment and post-payment edits
4	Discharge date invalid or missing
50	MCE table (MCT370RT) could not be opened or is corrupted

EDflag is not set for admitting diagnosis.

DSCPTR

Used with the report programs. This is the address of a binary (PIC 9(8) COMP) fullword indicating whether the ICD code English description file will be accessed. A value of 0 (zero) indicates that no English descriptions are wanted, while a value of 1 indicates that descriptions will be printed. If descriptions are bypassed, their area in the print line is blanked out. No change in print format occurs.

OPTPTR

Used with the report programs. Up to 11 OPTPTRs may be present, with each one pointing to a 40-byte user-allocated area containing additional patient information (patient I.D., length of stay, etc.) that is to be included as a line of output on the report. The report program will print the entire 40 bytes "as is" for each option line present. These lines will be printed immediately below the title line and before the standard information (provider number, PPS status, age, sex, discharge status, date, diagnosis and procedures) is reported.

For MCT370PB and MCT370PC, at least two OPTPTRs must be present, and they must be the 17th and 18th pointers in the control block. The first OPTPTR (#17) must be the address of an area allocated to hold report lines. The second OPTPTR (#18) must be the address of a fullword into which the report programs (MCT370PB or MCT370PC) will place a binary (PIC 9(8) COMP) count of the actual number of report lines used. The remaining OPTPTRs can be used as described above. See The report program (page) for a full explanation of the report programs.

It is the user's responsibility to set a flag in the last pointer to indicate the end of the pointer list. To set the end-of-list flag the high-order bit of the last pointer must be turned on. For COBOL programmers, the CALL... USING statement automatically sets the end-of-list indicator.

Chapter 6: The report programs

Three report programs are included in the Medicare Code Editor (MCE) program. All versions of the software are compatible with the report programs discussed below.

MCT370PA

This standard report program (format A) prints each patient record on a separate page. MCT370PA output is written to a file with the DD name RPTFILE which can be allocated to the printer, a disk, or media file. RPTFILE is opened on the initial call to MCT370PA. In order to close RPTFILE, MCT370PA must be called with Register 1 set to a value of zero (for COBOL, a CALL MCT370PA with no parameters will have this effect). If you are blocking RPTFILE records, closing the file is essential, or the last block of output may be lost.

MCT370PB

This report program (format B) is the same as above, except instead of printing, a mirror of the report page is returned with a count of lines. The first position of each line is the carriage control character, having one of the values shown in the following table.

Table 21.   Carriage control character values

Value	Explanation
1	Skip to new page before printing line
0	Space two lines before printing current line
Blank	Normal print spacing

MCT370PC

This report program (format C) returns a series of taglines, one tagline for each diagnosis and procedure on the patient record. The tagline will include any error messages. Each line follows a coded tag which explains the tagline. The tag numbers are 4-byte numerics. There will be two or more lines with the same tag number if more than one error is found for the same diagnosis or procedure. Taglines are explained in the following table.

Table 22.   MCT370PC tagline format

Tag number	Tagline
0101-0116	Diagnosis line, with 101 as the admitting diagnosis, 102 as the principal diagnosis, 103 as the first secondary diagnosis, etc.
0201-0215	Procedure line, with 201 as the first listed procedure, 202 the second, etc.
0301	Line indicating invalid discharge disposition
0401	Line indicating invalid age
0501	Line indicating invalid sex

The following table is an example of the taglines that might be returned by MCT370PC.

Table 23.   MCT370PC tagline example

Positions 1-4	Positions 5-104
0101	R53.83 Other fatigue
0102	E11.22 Type 2 diabetes mellitus with diabetic chronic kidney disease
0103	N18.1 Chronic kidney disease, stage 1
0201	06HY33Z Insertion of Infusion Device into Lower Vein, Percutaneous Approach
0202	0H57XZD Destruction of Abdomen Skin, Multiple, External Approach
0301	Invalid discharge disposition

Uses for the report programs

The MCE user may utilize the report programs in a variety of ways. Some uses are suggested below. In each example, your interface program would do the flag testing and decide whether or not to call one of the print programs.

Remember that for MCT370PB and MCT370PC, the first two OPTPTRs are used for passing and receiving line information. Refer to Chapter 5 (page 37) for an explanation of the OPTPTRs.

To run the report programs, Register 1 must again be pointing to the control block.

MCT370PA

MCT370PA could be called each time the edit flag (position 137-138 in the MCEBUFF) was returned with a value greater than zero (remember that invalid admitting diagnosis does not set this flag). This would generate a one-page report for the patient record on which errors were detected.

Alternatively, MCT370PA could be called for each record, whether or not any flags were set, which could produce a large volume of print output.

MCT370PA output could be written to a media or disk file for later printing.

MCT370PB

MCT370PB could be called if you wanted to have all of the basic information in the standard report, but wanted to insert lines or edit the report before printing. Your interface program must allocate sufficient space for holding a full report. It must also control all I/O to the printer, as MCT370PB does not actually generate any printing.

The allocated area can be calculated by multiplying the expected maximum number of lines by 99 (the maximum number of characters per line).

MCT370PC

MCT370PC could be called if you wanted the editor information for each diagnosis and procedure, but wanted to integrate it with other information tailored to your own reporting requirements.

Your interface program must allocate space. In this instance, the space requirement would be:

maximum diagnosis (NDXPTR value) + maximum procedures (NSGPTR value) +3) x 104(maximum diagnosis (NDXPTR value) + maximum procedures (NSGPTR value) +3) x 104

If English descriptions are bypassed, the above statement is excluded. For more information, see DSCPTR in Chapter 5 (page 37).

The following figure illustrates a compile-link-go including the standard report program (MCT370PA). If English descriptions are bypassed, the line marked with the dagger (†) is excluded.

```
//JOB CARD FOR YOUR INSTALLATION
//* ******************************************************
//* THIS JOB IS USED TO COMPILE, LINK AND RUN THE MCE
//* COBOL TEST PROGRAM, COBTEST.
//*
//* BOTH OBJECT AND LOAD MODULES ARE TEMPORARY.
//* ******************************************************
//COBUCLG PROC SYSOUT='*'
//*    COBOL FOR MVS COMPILE AND LINK
//COB     EXEC  PGM=IGYCRCTL,PARM='RENT,NODYNAM'
//STEPLIB  DD   DSN=IGYV3R4.SIGYCOMP,DISP=SHR
//SYSLIB   DD   DSN=YOURID.&PROD..SRCLIB,DISP=SHR
//SYSPRINT DD   SYSOUT=&SYSOUT
//SYSIN    DD   DSN=YOURID.&PROD..SRCLIB(COBTEST),DISP=SHR
//SYSUT1   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT2   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT3   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT4   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT5   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT6   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT7   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSLIN   DD   DSN=&&LOADSET,UNIT=SYSDA,DISP=(MOD,PASS),
//              SPACE=(TRK,(3,3)),DCB=BLKSIZE=800
//*
//LKED    EXEC  PGM=IEWL,PARM='LIST,MAP,AMODE=31,RMODE=ANY',
//              COND=(5,LT,COB)
//SYSLIB   DD   DSN=CEE.SCEELKED,DISP=SHR
//SYSLMOD  DD   DSN=&&GOSET(COBTEST),UNIT=SYSDA,DISP=(,PASS),
//              SPACE=(CYL,(5,1,5))
//SYSUT1   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSPRINT DD   SYSOUT=&SYSOUT
//SYSLIN   DD   DSN=&&LOADSET,DISP=(OLD,DELETE)
//         DD   DDNAME=SYSIN
//OBJECT   DD   DSN=YOURID.&PROD..OBJLIB,DISP=OLD
//*
//GO      EXEC  PGM=COBTEST,COND=((5,LT,COB),(5,LT,LKED))
//STEPLIB  DD DISP=SHR,DSN=&&GOSET
//         DD DISP=SHR,DSN=CEE.SCEERUN
//INFILE   DD DSN=YOURID.&PROD..TESTDB,DISP=SHR
//SYSPRINT DD SYSOUT=&SYSOUT

//MCE37DSC DD DSN=YOURID.&PROD..VSFILE,DISP=SHR †
//RPTFILE  DD SYSOUT=&SYSOUT,DCB=(RECFM=FA,BLKSIZE=99,BUFNO=1)
//         PEND
//*
//PROG1    EXEC COBUCLG,PROD=MCE370.I10
//*
//LKED.SYSIN DD *
 INCLUDE OBJECT(MCT370CN,MCT370ED,MCT370RT)
 INCLUDE OBJECT(MCT370PA,MCT370VS,MCT370DT)
 ENTRY COBTEST
 NAME COBTEST
/*
```

Appendix A: MCE Software edits

The edits contained in the current Medicare Code Editor (MCE) software are listed here with their descriptions. These edits are the official MCE edits specified by the Centers for Medicare & Medicaid Services (CMS).

Below is a list of edit messages described in this appendix:

1. Invalid diagnosis or procedure code

2. External cause codes as principal diagnosis

3. Duplicate of PDX

4. Age conflict

5. Sex conflict

6. Manifestation code as principal diagnosis

7. Non-specific principal diagnosis (Discontinued as of 10/01/07)

8. Questionable admission

9. Unacceptable principal diagnosis

10. Non-specific O.R. procedure (Discontinued as of 10/01/07)

11. Non-covered procedure

12. Open biopsy check (Discontinued as of 10/01/10)

13. Bilateral procedure (Discontinued as of ICD-10 implementation)

14. Invalid age

15. Invalid sex

16. Invalid discharge status

17. Limited coverage

18. Wrong procedure performed

19. Procedure inconsistent with LOS

1. Invalid diagnosis or procedure code

MCE software checks each diagnosis code, including the admitting diagnosis, and each procedure code against a table of valid diagnosis or procedure codes. If an entered code does not agree with any code on the internal list, the entered code is considered invalid.

2. External cause codes as principal diagnosis

External cause codes (V, W, X or Y codes (ICD-10-CM), E codes (ICD-9-CM)) as principal diagnosis describe the circumstance(s) that caused an injury, not the nature of the injury (e.g., fall from bed), and therefore should not be used as a principal diagnosis.

3. Duplicate of PDX

Whenever a secondary diagnosis is coded the same as the principal diagnosis, the secondary diagnosis is identified by MCE software as a duplicate of the principal diagnosis. This is because the diagnosis code may be considered a complication or comorbidity (CC) and will create an error in DRG assignment if the DRG is affected by the presence of a CC.

4. Age conflict

MCE software detects inconsistencies between a patient's age and any diagnosis on the patient's record. Examples of age conflicts are a five-year-old patient with benign prostatic hypertrophy, and a 78 year-old patient with a delivery. In such cases, either the diagnosis or age is presumed to be incorrect. There are four age code categories: newborn (less than one year), pediatric (0–17 years inclusive), maternity (9–64 years inclusive), and adult (15–124 years inclusive).

Note: In Version 37, adjusted Maternity age range to be 9 to 64. Effective 10/01/2019. Prior to this date, the Maternity age range of 12 to 55 will be used.

5. Sex conflict

MCE software detects inconsistencies between a patient's sex and any diagnosis or procedure on the patient's record. Examples of sex conflicts are a male patient with cervical cancer (diagnosis) and a male patient with a hysterectomy (procedure). In such cases, either the diagnosis, procedure, or sex is presumed to be incorrect.

6. Manifestation code as principal diagnosis

Manifestation codes describe the manifestation of an underlying disease, not the disease itself, and therefore should not be used as a principal diagnosis.

7. Non-specific principal diagnosis

Discontinued as of 10/01/07.

A set of diagnosis codes, particularly those described as "not otherwise specified" (NOS), are identified by the software as non-specific. While these codes are valid ICD-10-CM codes, more precise codes should be used for the principal diagnosis. It should be noted that a diagnosis is considered non-specific only if the patient was discharged alive; patients who have died often do not receive a complete diagnostic workup, and specification of a precise principal diagnosis may not be possible.

8. Questionable admission

There are some diagnoses which are not usually sufficient justification for admission to an acute care hospital (e.g., benign hypertension). In these cases, the diagnosis code is flagged.

9. Unacceptable principal diagnosis

There are selected codes that describe a circumstance which influences an individual's health status but is not a current illness or injury (e.g., family history of ischemic heart disease) or codes that are not specific manifestations but may be due to an underlying cause. Such codes are considered unacceptable as a principal diagnosis. In a few cases, some unacceptable codes will be acceptable as principal diagnosis if any secondary diagnosis is coded; for these codes, the software displays a "Requires secondary dx" message next to the code in place of the "Unacceptable principal diagnosis" edit.

10. Non-specific O.R. procedure

Discontinued as of 10/01/07.

A set of O.R. procedure codes, particularly those described as "not otherwise specified" (NOS), are identified by the software as non-specific. While these codes are valid ICD-10-CM codes, more precise codes should be used. It should be noted that the non-specific O.R. procedure condition is reported only if all the O.R. procedures performed have been coded as non-specific;

if a patient had several O.R. procedures and only one was non-specific, the edit would not be generated.

11. Non-covered procedure

Medicare does not provide reimbursement for some procedures and their codes are flagged by the software. Some non-covered procedures are covered under certain circumstances with particular principal or secondary diagnoses, as specified by CMS.

12. Open biopsy check

Discontinued as of 10/01/10.

Biopsies can be performed as open (i.e., a body cavity entered surgically), percutaneous, or endoscopic procedures. Patients are assigned to different DRGs depending on whether or not the biopsy was open. ICD-9-CM codes are explicit for open and non-open biopsies; however, the distinction made by the codes is not applied uniformly. MCE software identifies all biopsies that are coded as open biopsies, and suggests the corresponding non-open biopsy code to use, if applicable.

13. Bilateral procedure

Discontinued as of ICD-10 implementation

Certain codes do not accurately reflect procedures that are performed in one admission on two or more different bilateral joints of the lower extremities. A combination of these codes shows a bilateral procedure when, in fact, they could be procedures performed on a single joint (i.e., duplicate procedures). When two or more different joint replacement procedures are coded, this edit instructs the fiscal intermediary to make sure that these procedures were performed on two separate joints.

14. Invalid age

A patient's age is usually needed for correct DRG grouping. If the age reported is outside the valid range (0–124 years), the software assumes the age is in error.

15. Invalid sex

A patient's sex is sometimes needed for correct DRG grouping. The sex code reported must be either 1 (male) or 2 (female). If the entry is not either of these values, the software flags the record.

16. Invalid discharge status

A patient's discharge status is sometimes needed for correct DRG grouping. Discharge status must be coded according to the UB–04 conventions. Note that when an invalid discharge status is reported, the patient is presumed to have been discharged alive for the purpose of performing the non-specific principal diagnosis check.

17. Limited coverage

For certain procedures whose medical complexity and serious nature incur extraordinary associated costs, Medicare limits coverage to a portion of the cost. The edit applies to such procedures as lung volume reduction surgery (LVRS), an implantable heart assist system, and major organ transplants.

18. Wrong procedure performed

Certain external cause codes indicate that the wrong procedure was performed.

19. Procedure inconsistent with LOS

The length of stay is sometimes needed to report certain procedures.

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