

ICD-10 Follow On Class 1 Software Remediation Project

Diagnostic Related Group (DRG) Grouper

Software Version 18.0

Release Notes

ICD*18.0*64



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**Department of Veterans Affairs
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Product Development**

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1. Introduction

1.1. Purpose

The purpose of these Release Notes is to identify enhancements to the Diagnostic Related Group (DRG) Grouper package contained in patch ICD*18*64.

1.2. Background

On January 16, 2009, the Centers for Medicare & Medicaid Services (CMS) released a final rule for replacing the 30-year-old International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code set with International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) with dates of service, or dates of discharge for inpatients, that occur on or after the ICD-10 Activation Date.

The classification system consists of more than 68,000 codes, compared to approximately 13,000 ICD-9-CM codes. There are nearly 87,000 ICD-10-PCS codes, while ICD-9-CM has nearly 3,800 procedure codes. Both systems also expand the number of characters allotted from five and four respectively to seven alphanumeric characters. This value does not include the decimal point, which follows the third character for the ICD-10-CM code set. There is no decimal point in the ICD-10-PCS code set. These code sets have the potential to reveal more about quality of care, so that data can be used in a more meaningful way to better understand complications, better design clinically robust algorithms, and better track the outcomes of care. ICD-10-CM also incorporates greater specificity and clinical detail to provide information for clinical decision-making and outcomes research.

ICD-9-CM and ICD-10-CM Comparison

ICD-9-CM	ICD-10-CM
13,000 codes (approximately)	68,000 codes (approximately)
3-5 characters	3-7 characters (not including the decimal)
Character 1 is numeric or alpha (E or V)	Character 1 is alpha; character 2 is numeric
Characters 2 - 5 are numeric	Characters 3–7 are alpha or numeric (alpha characters are not case sensitive)
Decimal after first 3 characters	Same

ICD-9-CM and ICD-10-PCS Comparison

ICD-9-CM Procedure Codes	ICD-10-PCS
3-4 characters	7 alphanumeric characters
All characters are numeric	Characters can be either alpha or numeric. Letters O and I are not used to avoid confusion with the numbers 0 and 1
All characters are numeric	Each character can be any of 34 possible values. The ten digits 0-9 and the 24 letters A-H, J-N and P-Z may be used in each character
Decimal after first 2 characters	Does not contain decimals

1.3. Scope of Changes

NOTE: Existing ICD-9 functionality has not changed and the selection of inactive ICD-9 Operation/Procedure codes within the ICD9OP tag is not allowed.

Patch ICD*18*64 makes the following changes to the DRG Grouper application:

- Uses Lexicon search Application Program Interfaces (APIs) for the two new choices in the *ICD Code Inquiry* option:
 - ICD 10 DIAGNOSIS CODE
 - ICD 10 OPERATION/PROCEDURE CODE
- Provides calculation of DRG code for ICD-10 diagnosis codes and ICD-10 procedure codes.
- Makes ICD-9 DRG calculation routines compliant with ICD-10 file changes.
- Does not allow selection of inactive ICD-10 codes.
- Replaces global reads with Standards and Terminology Services (STS) APIs.
- Provides a “Present on Admission?” prompt after each of the prompts for the principal and secondary diagnosis to capture Present on Admission (POA) indicators for each of entered diagnosis codes.
- Renames the screen labels of “primary” diagnosis to “principal” diagnosis.
- Removes hardcoded business rules from DRG Calculation and made the calculating data-driven based on the data downloaded from the Centers for Medicare & Medicaid Services (CMS) website, and loaded the existing and new global files.
- Provides a re-display of the choices the user entered for each of the following:
 - Principal diagnosis
 - Secondary diagnosis
 - Procedure code
 - POA value

1.4. Documentation

The DRG Grouper manuals are posted on the VA Software Document Library (VDL)
<http://www.va.gov/vdl/application.asp?appid=36>.

The following DRG Grouper user manuals are updated with changes for ICD*18*64:

- Technical Manual
- User Manual

The following manual is not updated with changes for ICD*18*64:

- Installation Guide

The following manual does not exist for this package:

- Security Guide

NOTE: Security Information is contained within the *DRG Technical Manual*.

2. ICD Code Inquiry Option

The *ICD Code Inquiry* option displays the description for a selected diagnosis or operation/procedure code. It also tells the user if the specified code is inactive. The user is first asked to choose between ICD-9 or ICD-10 diagnosis code, or ICD-9 or ICD-10 operation/procedure code, and then asked to enter the desired code. The choice of ICD-10 Diagnosis and operation/procedure code has been added to the selections under this option.

Example of Previous ICD Code Inquiry

```
Select Menu Option:  ICD Code Inquiry
      Select one of the following:
          1  ICD DIAGNOSIS CODE
          2  ICD OPERATION/PROCEDURE CODE
Enter response: 1  ICD DIAGNOSIS CODE
Select ICD 9 DIAGNOSIS: 305.10      305.10      TOBACCO USE DISORDER
UNSPECIFI
      ...OK? Yes// <RET>  (Yes)
305.10      TOBACCO USE DISORDER UNSPECIFI
TOBACCO USE DISORDER UNSPECIFIED
      **CODE INACTIVE AS OF  OCT 01, 1994 **
```

Example of Updated ICD Code Inquiry

```
Select Menu Option:  ICD Code Inquiry
Effective Date:  TODAY//  (OCT 16, 2015)
      Select one of the following:
          1  ICD 9 DIAGNOSIS CODE
          2  ICD 9 OPERATION/PROCEDURE CODE
          3  ICD 10 DIAGNOSIS CODE
          4  ICD 10 OPERATION/PROCEDURE CODE
Enter response: 1  ICD 9 DIAGNOSIS CODE
Select ICD 9 DIAGNOSIS: 305.10      305.10      TOBACCO USE DISORDER
UNSPECIFI
      ...OK? Yes// <RET>  (Yes)

305.10      TOBACCO USE DISORDER UNSPECIFI
TOBACCO USE DISORDER UNSPECIFIED
      **CODE INACTIVE AS OF  OCT 01, 1994 **
```


3. ICD-10 Searches

The DRG Grouper package provides the ability to search on ICD-10-CM diagnosis codes and ICD-10-PCS procedure codes.

NOTE: Existing ICD-9 functionality has not changed. In addition, the selection of inactive ICD-9 Operation/Procedure codes within the ICD9OP tag is not allowed.

3.1. ICD-10-CM Diagnosis Code Search

The DRG Grouper ICD-10 diagnosis code search functionality allows the end user to select a single, valid ICD-10 diagnosis code and display its description. The DRG Grouper user interface prompts the user for input, invokes the Lexicon utility to get data, and then presents that data to the end user.

This search method provides a “decision tree” type search that uses the hierarchical structure existing within the ICD-10-CM code set, as defined in the ICD-10-CM Tabular List of Diseases and Injuries, comprising categories, sub-categories, and valid ICD-10-CM codes.

ICD-10-CM diagnosis code search highlights include:

- Text-based search using one or more words as search terms, finding matches based on full descriptions, synonyms, key words, and shortcuts associated with ICD-10-CM diagnosis codes, which are inherently built into the Lexicon coding system.
- The more refined the search criteria used (i.e., the more descriptive the search terms), the more streamlined the process of selecting the correct valid ICD-10 diagnosis code will be.
- The user is presented with a manageable list of matching codes with descriptions, consisting of any combination of categories, sub-categories, and valid codes. The length of the list of items that is presented is set to a default of 20,000. If the list is longer, the user is prompted to refine the search.
- The user can “drill down” through the categories and sub-categories to identify the single, valid ICD-10-CM code that best matches the patient diagnosis.
- Short descriptions for the valid ICD-10-CM codes display.
- Partial code searches are also possible, as is full ICD-10-CM code entry, for situations where all or part of the code is known.

Diagnosis Code Search – Partial-Code Example

```
Enter Principal diagnosis (ICD 10): D3
```

```
11 matches found
```

```
1. D30.-      Benign neoplasm of urinary organs (13)
2. D31.-      Benign neoplasm of eye and adnexa (24)
3. D32.-      Benign neoplasm of meninges (3)
4. D33.-      Benign neoplasm of brain and oth prt central
                nervous system (7)
```

```
Press <RETURN> for more, "^" to exit, or Select 1-4:
```

The user can press **Enter** to view more results or the user can enter the number corresponding to the choice they want. In this example, the user selects **2** to show the results for the **D31.-** diagnosis codes.

Diagnosis Code Search – Partial-Code Example: D31.-

```
Press <RETURN> for more, "^" to exit, or Select 1-4: 2
```

```
24 matches found
```

1. D31.00 Benign Neoplasm of unspecified Conjunctiva
2. D31.01 Benign Neoplasm of right Conjunctiva
3. D31.02 Benign Neoplasm of left Conjunctiva
4. D31.10 Benign Neoplasm of unspecified Cornea
5. D31.11 Benign Neoplasm of right Cornea
6. D31.12 Benign Neoplasm of left Cornea
7. D31.20 Benign Neoplasm of unspecified Retina
8. D31.21 Benign Neoplasm of right Retina

```
Press <RETURN> for more, "^" to exit, or Select 1-8:
```

3.2. ICD-10-PCS Procedure Code Search

The DRG Grouper ICD-10 procedure code search functionality allows the end user to select a single, valid ICD-10 procedure code and display its description. The procedure code selection is based on the individual characters of ICD-10-PCS codes. The user must enter at least one character of a code. The system displays the possible values for the next digit, so the user can build the procedure code dynamically. The DRG Grouper ICD-10 procedure code search utility provides the user interface, which prompts the user for input and invokes the Lexicon utility to get data and then presents that data to the end user for selecting either a single, valid ICD-10 procedure code character or ICD-10 procedure code.

This search method provides a “decision tree” type presentation which makes use of the specific ICD-10-PCS code format and structure, where all codes consist of seven characters, with each position in the code having a specific meaning, as shown in the following table:

Procedure Code Composition

Position	1	2	3	4	5	6	7
Aspect	Section	Body System	Root Operation / Type	Body Part	Approach	Device	Qualifier

ICD-10-PCS procedure code search highlights include:

- This is a completely code-based search (i.e., not text-based). The user essentially “builds” the ICD-10 procedure code as they go, character by character.
- The user is presented with the list of possible values, with their descriptions, for each character (position) in the code, as they enter/select a value for each character.
- The list of options presented for each character is based on the values selected for each previous character up to that point. Initially, the user is presented with the list of possible

values for character 1 (Section). Then, as the value for each character is entered/selected, the list of possible values for each subsequent character displays.

- Additional information (i.e., Definitions, Explanations, and/or Includes Examples) is provided along with the values and descriptions for each character, if applicable, to assist with the selection of the correct value.
- If part of the full ICD-10-PCS code is known, the user can enter the initial characters and the system displays the list of possible values for the subsequent character. Full code entry is also possible, if the full ICD-10-PCS code is known.
- When values for all seven characters have been entered/selected, the code and full description display for user verification. Short descriptions for the ICD-10-PCS codes display.

PCS Code Search - Example with * Search Used in Position 7

Press '*' to display available choices for next character or '^' to exit.

ICD-10 Procedure code: **0TBC0Z**

0 - Medical and Surgical

T - Urinary System

B - Excision

C - Bladder Neck

0 - Open

Z - No Device

2 matches found for character 7.

1. X Diagnostic

2. Z No Qualifier

Select 1-2:

3.3. Present on Admission

DRG Grouper captures the Present on Admission (POA) value for each diagnosis the user enters. According to CMS, POA is defined as present at the time the order for inpatient admission occurs—conditions that develop during an outpatient encounter, including emergency department, observation, or outpatient surgery, are considered POA.

Present on Admission (POA) Values

Value	Description
Y	Present at the time of inpatient admission
N	Not present at the time of inpatient admission
U	Documentation is insufficient to determine if condition is present on admission
W	Provider is unable to clinically determine whether condition was present on admission or not
<Return>	POA exempt (Warning provided if code entered is not on the POA Exempt List)

3.3.1. POA Exempt List and Blank POA Values

The diagnosis must have a POA value; it cannot be left blank. The only exception is if the diagnosis is on the POA Exempt List. In all other cases, if the POA value is left blank, the user receives a message that DRG Grouper treats the blank as a No.

POA Blank Message

```
Present on Admission:
Diagnosis A05.1 is not contained in the POA Exempt list so the POA
field should not be blank. If left blank, it will be treated as if it
were a No ("N").
Do you wish to continue? (Y/N)? YES//
```

At the Do you wish to continue? (Y/N)? Yes// prompt, if the user presses **Enter** for the default of Yes, DRG Grouper uses a POA value of No for the diagnosis.

However, if the user types **N** and presses **Enter**, the system stops processing for this patient and the user must start the DRG steps from the beginning.

3.4. Re-display Codes, Descriptions and Values

After the user enters the information needed to calculate the DRG, DRG Grouper provides a re-display of the user's choices for diagnosis, procedure, and POA values. The short descriptions display for codes and the POA value is listed for each code that was entered.

Re-display of User's Selections for a DRG Calculation

```
Principal Diagnosis: D33.1      Benign neoplasm of brain, infratentorial
POA=Y
Secondary Diagnosis: E09.00     Drug/chem diab w hyprosm w/o nonket
hyprgly- POA=N

Procedure Code:      0TBC0ZX    Excision of Bladder Neck, Open Approach,
Diagnosti

          Effective Date:      OCT 1,2015
Diagnosis Related Group:      750          Avg len of stay:      2.2
          Weight: 1.0799          Local Breakeven:
          Low day(s):      1          Local low day(s):
          High days:      99          Local High days:

DRG: 750- OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES W/O CC/MCC
```

4. Technical Information

4.1. Routines

Some DRG Grouper routines were modified to replace direct global reads and old APIs with new STS APIs and Lexicon APIs wherever possible. The following new routines are added:

Routines Added

Routine Name	Function
ICD10TB0	Contains rules for DRG 1 to DRG 99. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB1	Contains rules for DRG 100 to DRG 199. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB2	Contains rules for DRG 200 to DRG 299. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB3	Contains rules for DRG 300 to DRG 399. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB4	Contains rules for DRG 400 to DRG 499. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB5	Contains rules for DRG 500 to DRG 599. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB6	Contains rules for DRG 600 to DRG 699. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB7	Contains rules for DRG 700 to DRG 799. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.

Routine Name	Function
ICD10TB8	Contains rules for DRG 800 to DRG 899. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICD10TB9	Contains rules for DRG 900 to DRG 999. Once logical grouping is identified, these rules are executed at the end to isolate to a particular DRG. Decision tables in CMS.gov website are used to create these rules.
ICDCODLK	ICD-10 Procedure Search
ICDDG010	This routine is the ICD-10 replacement for ICDDRG0. It contains code that calculates the DRG based on input variables passed to it from routine ICDDRG. As part of this process, it also calls other routines that participate in this calculation of the DRG.
ICDDRGX1	Calculates DRG value for MDC24, MDC25 and MDC4. It is copied from the ICD-9 corresponding routine ICDDRGXM and made ICD-10 compliant.
ICDDRGX2	Contains one API: VARIABLS. It contains hard-coded rules that are published by CMS.gov. These rules are contained in "decision tables."
ICDDRGX3	Contains continuation of API VARIABLES from ICDDRGX2. It contains hard-coded rules.
ICDDSLK	ICD-10 Diagnosis Search
ICDRGAPI	<p>Contains APIs that get called by ICD-10 DRG Grouper calculation. The following APIs are coded in this routine.</p> <ol style="list-style-type: none"> 1. ICDID – Check if an identifier exists for diagnosis or procedure code 2. IDIEN – Get IEN for Identifier code 3. ICDIDS – Returns an array of Identifier codes for diagnosis code or procedure code 4. ICDIDF – Returns value indicating if identifier (s) exist in an array 5. ICDIDC – Returns value indicating if identifier(s) exist in a cluster 6. BLKCHK – Check if DX/PX code is in cluster 7. ISOWNCC – If DX is own CC, return the CC value else zero 8. ICDMRG – Merge ARY2 with ARY1 and increment the counter 9. CLUSTERS – Load cluster identifier codes into ICD10SD, ICD10OR 10. LDMDCDRGD – Load DRG and check MDC for Diagnosis codes 11. ICDRGCC – Get CC/MCC flag from DRG 12. ISACCEX – Is Code1 condition of Code2 13. ICDXEXPT – Check if the DX code indicated matches any code in list

Routine Name	Function
ICDSELDS	Implements selection of ICD diagnosis from the Lexicon utility list
ICDSELPS	Implements selection of ICD procedures from the Lexicon utility list

4.2. Files

Patch ICD*18*64 introduced several new files:

- DRG DIAGNOSIS CODE COMBINATIONS file (#82.12)
- DRG DIAGNOSIS IDENTIFIER CODES file (#82)
- DRG PROCEDURE CODE COMBINATIONS file (#82.11)
- DRG PROCEDURE IDENTIFIER CODES file (#82.1)
- DRG PROCEDURE IDENTIFIER CODE multiple (#73)
- DRG RULES SURGICAL HIERARCHY file (#80.5)
- HOSPITAL ACQUIRED CONDITIONS file (#80.6)

4.3. Online Help for ICD-10

Help (?) and extended help text (?, ???) are included for prompts related to ICD-10 codes. An error message displays for partial-code entries of a single character.

Diagnosis Code Help (?)

Enter Principal diagnosis (ICD 10): ?

Enter code or "text" for more information.

Diagnosis Code Help (??)

Enter Principal diagnosis (ICD 10): ??

Enter a "free text" term or part of a term such as "femur fracture" or

Enter a "classification code" (ICD/CPT, etc.) to find the single term associated with the code or

Enter a "partial code." Include the decimal when a search criterion includes 3 characters or more for code searches.

Diagnosis Code Help (???)

Enter Principal diagnosis (ICD 10): ?

Number of Code Matches

The ICD-10 Diagnosis Code search will show the user the number of matches found, indicate if additional characters in ICD code exist, and the number of codes within the category or subcategory that are available for selection. For example:

19 matches found

M91. - Juvenile osteochondrosis of hip and pelvis (19)
This indicates that 19 unique matches or matching groups have been found and will be displayed.

M91. - the '-' indicates that there are additional characters that specify unique ICD-10 codes available.

(19) Indicates that there are 19 additional ICD-10 codes in The M91 'family' that are possible selections. "

Error with Single-Character Entry of Diagnosis Code / Description

Enter Principal diagnosis (ICD 10): **D**

Please enter at least the first two characters of the ICD-10 code or code description to start the search.

Procedure Code Help with Question Mark (?) and Asterisk (*)

There are three levels of help available using the question mark: ?, ??, and ???. Also, for ICD-10 procedure codes, typing the asterisk (*) provides the possible values for the code in the position.

Procedure Code Help (?)

Enter Operation/Procedure (ICD 10):?

Enter the initial character(s) of an ICD-10 partial code or an asterisk (*) for more information.

Procedure Code Help (??)

Enter Operation/Procedure (ICD 10):??

1. Enter an ICD-10 Procedure Code.
or
2. Enter any alphanumeric char values of the procedure code to 'build' an ICD-10 Procedure Code.
or
3. Enter an asterisk (*) to initiate a procedure code build search.

Procedure Code Help (???)

Enter Operation/Procedure (ICD 10):???

The procedure code search provides a 'decision tree' type Structure that makes use of the specific ICD-10-PCS code format and structure, where all codes consist of 7 alphanumeric characters, with each position in the code having a specific meaning.

Procedure Code Asterisk (*) for Possible Values

Press '*' to display available choices for next character or '^' to exit.

ICD-10 Procedure code:102073

1 - Obstetrics

0 - Pregnancy

2 - Change

0 - Products of Conception

7 - Via Natural or Artificial Opening

3 - Monitoring Electrode

One code found for character 7.

Z No Qualifier

OK? (Yes/No) Yes// **YES**

For Present on Admission (POA), the help provides the possible POA values.

Present on Admission Help (?)

Present on Admission: ?

Apply the Present on Admission (POA) indicator for each diagnosis and external cause of injury code(s) reported as the final set of diagnosis codes assigned. One of the following values should be assigned in accordance with the official coding guidelines:

Y = present at the time of inpatient admission;

N = not present at the time of inpatient admission;

U = documentation is insufficient to determine if condition is present on admission;

W = provider is unable to clinically determine whether condition was present on admission or not

<enter> = use only if diagnosis is exempt from POA reporting

Select one of the following:

Y YES

N NO

U Unknown

W Clinically undetermined