

### **ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine**

The ICD-O Second Edition to ICD-O Third Edition Subroutine converts morphology codes in ICD-O Second Edition (ICD-O-2) to ICD-O Third Edition (ICD-O-3). The conversion is based on *Conversion of Morphology from the International Statistical Classification of Diseases for Oncology, Second Edition (ICD-O-2) to the International Statistical Classification of Diseases for Oncology, Third Edition (ICD-O-3)*.

To use this subroutine, one supplies an ICD-O-2 topography code, histology code and behavior code. The subroutine returns the equivalent ICD-O-3 histology and behavior codes if they exist. If no equivalent ICD-O-3 codes exist, an indication that the input codes are incorrect is returned. For certain codes, an indicator that a hand review is required for complete conversion is returned.

The subroutine has been written to handle valid and invalid topography, histology and behavior codes. If these codes contain an error or other problem, an indicator is set that the conversion could not be done due to an error.

## ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

### PROGRAM ENVIRONMENT

#### Calling Sequence

This can be run as an executable in a Windows environment. Also, the icd2\_3Convert.c and icd2\_3Convert.h ANSI C files can be embedded in a larger processing program and the following function can be called:

```
int Convert(char *sSite, char *sHist, char *sBeh, char *sICDO3Hist, char *sICDO3Beh, char *sFlags);
```

#### System Requirements

The ICD-O Second Edition to ICD-O Third Edition Conversion routine was written and tested Windows 95 and ANSI C (C++ Builder 5 compiler).

#### Program Messages

NONE

## ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

### PROGRAM ENVIRONMENT

#### Common Area

When using the Windows executable, the user must supply an Input file name (the records to be converted), an Output file name (the newly converted records), and a Report file name (counts of how many records were processed and how many flags were set). The Input and Output files are expected to be fixed length ASCII files. For the Input file, the user must further supply the column position of the ICD-O-2 topography, histology and behavior codes and the record length. For the Output file, the user must supply the column position of the ICD-O-3 histology and behavior codes. These can either be appended to the end of the incoming record or overwrite a segment of the incoming record. The user may also supply a column position for the 4 conversion flags, again at the end of the incoming record or overwriting a segment. If no conversion flags are desired, enter 0 in this field. The user must supply the Output file record length, since this may be the same as the Input file (when the ICD-O-3 histology and behavior codes and conversion flags overwrite a segment of the incoming record) or longer (when these variables are appended to the end of the incoming record).

When calling the ANSI C function, the user supplies valid four digit ICD-O-2 topography and histology codes and valid one digit behavior code to the ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine. The subroutine returns the 4 character ICD-O-3 histology and behavior codes, along with the four character conversion flags in the memory provided. This function returns 0 if no flags were set, 1 if an Invalid code flag was set or 2 if the Hand Review flag was set. If the memory provided to the function for the conversion output is incorrect, a negative number is returned. (-1 the first conversion parameter is unacceptable; -2 the second conversion parameter is unacceptable; and so on)

<u>Item No.</u>	<u>Element Name</u>	<u>char * length</u>
1	ICD-O-2 Topography Code	4
2	ICD-O-2 Histology Code	4
3	ICD-O-2 Behavior Code	1
4	ICD-O-3 Histology Code	4
5	ICD-O-3 Behavior Code	1
6	Hand Review Indicator	1 <sup>st</sup> character of length 4 sFlags
7	Site (Topography) Out of Range Indicator	2 <sup>nd</sup> character of length 4 sFlags
8	Invalid Histology Indicator	3 <sup>rd</sup> character of length 4 sFlags
9	Invalid Behavior Indicator	4 <sup>th</sup> character of length 4 sFlags

### ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

#### Common Area Data Elements for Conversion Subroutine

NAME: ICD-O-2 Topography Code

ITEM NO: 1

SOURCE: Calling Program

PURPOSE: To specify the topography code in ICD-O-2 to be converted.

LENGTH: char \* of length 4

CONTENTS: This Subroutine uses a four character topography code within the range C000-C809. Codes which are in this range but are not specifically defined by *International Statistical Classification of Diseases for Oncology, 2<sup>nd</sup> Revision*, 1990, World Health Organization, Geneva, Switzerland are treated as valid because the conversion program is not specifically dealing with topography codes.

EDIT CRITERIA: Valid code as defined above.

**ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine**

Common Area Data Elements for Conversion Subroutine

NAME: ICD-O-2 Histology Code

ITEM NO: 2

SOURCE: Calling Program

PURPOSE: To specify the histology code in ICD-O-2 to be converted.

LENGTH: char \* of length 4

CONTENTS: This Subroutine will convert a valid four digit code.

8000-9999: = valid four digit ICD-O-2 histology code as defined by *International Statistical Classification of Diseases for Oncology 2<sup>nd</sup> Revision*, 1990, World Health Organization, Geneva, Switzerland.

EDIT CRITERIA: Valid code as defined above.

### ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

#### Common Area Data Elements for Conversion Subroutine

NAME: ICD-O-2 Behavior Code

ITEM NO: 3

SOURCE: Calling Program

PURPOSE: To specify the behavior code in ICD-O-2 to be converted.

LENGTH: char \* of length 1

CONTENTS: This Subroutine will convert a valid one digit code.

0-3, 6, 9: = valid one digit ICD-O-2 behavior code as defined by *International Statistical Classification of Diseases for Oncology 2<sup>nd</sup> Revision*, 1990, World Health Organization, Geneva, Switzerland.

EDIT CRITERIA: Valid code as defined above.

### ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

#### Common Area Data Elements for Conversion Subroutine

NAME: ICD-O-3 Histology Code

ITEM NO: 4

SOURCE: Subroutine

PURPOSE: To return to the calling program the ICD-O-3 histology code.

LENGTH: char \* of length 4

CONTENTS:

1. A valid ICD-O-3 code as defined by *International Statistical Classification of Diseases for Oncology, 3<sup>rd</sup> Revision, 2000*, World Health Organization, Geneva, Switzerland.
2. 9999: = a problem exists with the input data because the topography, histology or behavior codes are invalid.

#### METHOD OF DETERMINING:

Using the supplied topography, histology and behavior codes, the ICD-O-3 histology and behavior codes specified by *Conversion of Morphology from the International Statistical Classification of Diseases for Oncology Second Edition (ICD-O-2) to the International Statistical Classification of Diseases for Oncology Third Edition (ICD-O-3)* are inserted.

This field may also be set to 9999 if the topography, histology and behavior combination can not be converted. A combination may not be converted because:

1. The topography code is out of range, i.e., not C000-C809.
2. The histology code is invalid, i.e., not defined as a possible code for ICD-O-2.
3. The behavior code is invalid, i.e., not defined as a possible code for ICD-O-2.

### ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

#### Common Area Data Elements for Conversion Subroutine

NAME: ICD-O-3 Behavior Code

ITEM NO: 5

SOURCE: Subroutine

PURPOSE: To return to the calling program the ICD-O-3 behavior code.

LENGTH: char \* of length 1

CONTENTS:

1. A valid ICD-O-3 behavior code as defined by *International Classification of Diseases for Oncology 3<sup>rd</sup> Edition (ICD-O-3)* 2000 World Health Organization, Geneva, Switzerland.
2. 9:= when the ICD-O-3 Histology is set to 9999, this indicates that a problem exists with the input data because the topography, histology or behavior codes are invalid.

#### METHOD OF DETERMINING:

Using the supplied topography, histology and behavior codes, the ICD-O-3 behavior code specified by *Conversion of Morphology from the International Statistical Classification of Diseases for Oncology, Second Edition (ICD-O-2) to the International Statistical Classification of Diseases for Oncology, Third Edition (ICD-O-3)* is inserted.

This field may also be set to 9 with an ICD-O-3 histology code of 9999, if the topography, histology and behavior combination can not be converted. A combination may not be converted because:

1. The topography code is out of range, i.e., not C000-C809.
2. The histology code is invalid, i.e., not defined as a possible code for ICD-O-2.
3. The behavior code is invalid, i.e., not defined as a possible code for ICD-O-2.



### ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

#### Common Area Data Elements for Conversion Subroutine

NAME: Hand Review Indicator

ITEM NO: 6

SOURCE: Subroutine

PURPOSE: To communicate to the calling program that a morphology conversion has been made, but a hand review is needed.

LENGTH: 1<sup>st</sup> digit of char \* length 4 sFlags

CONTENTS: 0: = No hand review is needed.  
1: = Hand review of morphology is needed.  
2: = Hand review of morphology is recommended if multiple conversion will be executed.

#### METHOD OF DETERMINING:

Conversions requiring hand review are defined as any ICD-O-3 histology and behavior combination which has a hand review notation in *Conversion of Morphology from the International Statistical Classification of Diseases for Oncology, Second Edition (ICD-O-2) to the International Statistical Classification of Diseases for Oncology, Third Edition (ICD-O-3)*. For example, a histology of 8120 with a behavior of 0 (Transitional cell papilloma, NOS; Transitional papilloma) and any valid topography code requires hand review.

If multiple conversions are being executed, some histologies may need hand review to prevent misclassification. Generally, this may be a problem when multiple histologies in ICD-O-3 would all be converted to a single histology in ICD-O-2. For example, a histology of 8440 with a behavior of 0 (Cystadenoma, NOS; Cystoma, NOS) is the result of converting ICD-O-3 morphologies 8440/0, 8443/0, or 8454/0 to ICD-O-2.

**ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine**

Common Area Data Elements for Conversion Subroutine

NAME: Site (Topography) Out of Range Indicator

ITEM NO: 7

SOURCE: Subroutine

PURPOSE: To communicate to the calling program that the ICD-O-2 topography code is out of range.

LENGTH: 2<sup>nd</sup> digit of char \* length 4 sFlags

CONTENTS: 0: = In range site.  
1: = Out of range site.

METHOD OF DETERMINING: Topographies are considered in range if they fall between C000 and C809.

### ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine

#### Common Area Data Elements for Conversion Subroutine

NAME: Invalid Histology Indicator

ITEM NO: 8

SOURCE: Subroutine

PURPOSE: To communicate to the calling program that the ICD-O-2 histology code is invalid.

LENGTH: 3<sup>rd</sup> digit of char \* length 4 sFlags

CONTENTS: 0: = Valid histology.  
1: = Invalid histology.

METHOD OF  
DETERMINING:

Histologies are considered valid if a conversion is provided in *Conversion Morphology from the International Statistical Classification of Diseases for Oncology, Second Edition (ICD-O-2) to the International Statistical Classification of Diseases for Oncology, Third Edition (ICD-O-3)*. This indicator will be set because:

1. The ICD-O-2 histology code is not in the valid range defined on page 5 of this document.
2. The topography and behavior codes are valid, the ICD-O-2 histology code is in the range, but it is not specifically defined in conversion book.

If the topography or behavior codes are invalid and the ICD-O-2 histology code is in the valid range, this subroutine will not check to discover if the histology is specifically defined, but will return the appropriate invalid indicator for those codes which are out of range only.

**ICD-O Second Edition to ICD-O Third Edition Conversion Subroutine**

Common Area Data Elements for Conversion Subroutine

NAME: Invalid Behavior Indicator

ITEM NO: 9

SOURCE: Subroutine

PURPOSE: To communicate to the calling program that the ICD-O-2 behavior code is invalid.

LENGTH: 4<sup>th</sup> digit of char \* length 4 sFlags

CONTENTS: 0: = Valid behavior.  
1: = Invalid behavior.

METHOD OF DETERMINING: The behavior must appear as defined on page 6 of this document.