NCI SEER * DMS

CTC Summarization Process

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CTC Summarization Process

1. INTRODUCTION

The purpose of a CTC summarization is to summarize the treatment information of each of the Courses contained in the CTC. That treatment information is part of a set of Treatment Procedures contained in the Course. This can be visualized in the following simplify diagram of the Patient Set structure.

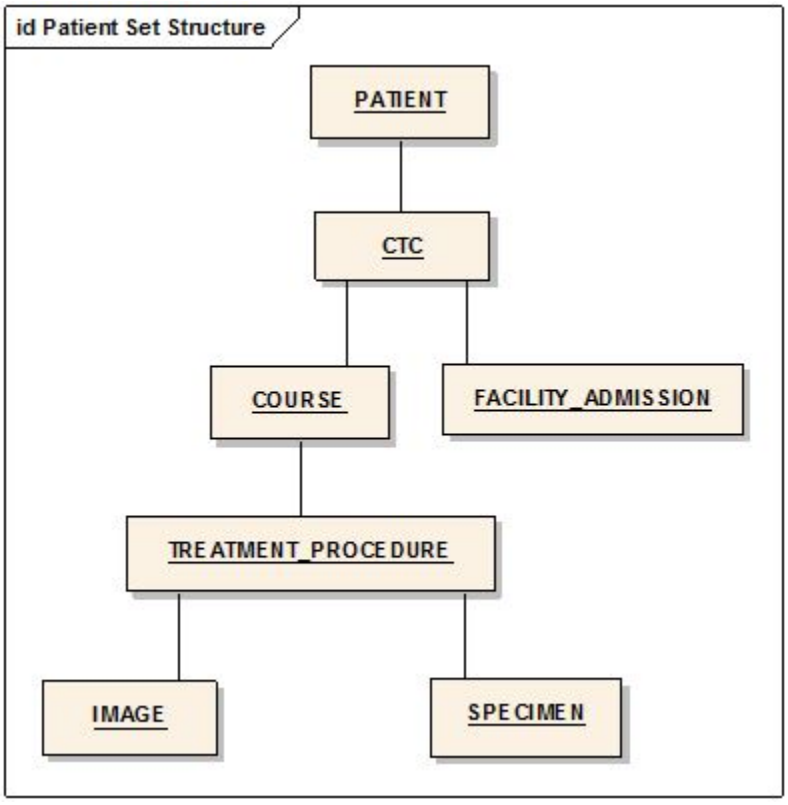


Figure1: Patient Set Structure

When summarizing a CTC, the Courses are divided into two categories: the Course1 and the Non-Course1. The summarization is done differently on those two categories. The Course1 summarization involves four sections: miscellaneous, surgery, radiation and systemic. Note that miscellaneous is not really a section but it just regroups any fields that are not part of the surgery, radiation or systemic section. Each section summarization uses fields from the Treatment Procedure and the summarized fields are kept on the CTC. The Non-Course1 summarization also uses fields from the Treatment Procedure but the summarized fields are kept on the Course itself.

The rest of this document explains in details how the summarization is done for the four sections of Course1 and for Non-course-1 courses.

1.1. Fields Involved in the Summarization

The following table shows the summarized fields from each section. Note that in the rest of the document, the database name will be used when referencing a field.

MISCELLANEOUS SECTION (ON CTC)

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
DX Proc 73-87	diagnosticProc7387	DIAGNOSTIC_PROC_73_87
DX/Stg (NonCA)	rxSummDxStgProc	RX_SUMM_DX_STG_PROC
Scr/BX Type	rxSummScreenBxType	RX_SUMM_SCREEN_BX_TYPE
Scr/BX Guid	rxSummScreenBxGuidance	RX_SUMM_SCREEN_BX_GUIDANCE
Scr/BX Appr	rxSummScreenBxApproach	RX_SUMM_SCREEN_BX_APPROACH
Scr/BX Othr	rxSummScreenBxOtherSite	RX_SUMM_SCREEN_BX_OTHER_SITE
Scr/BX Palp	rxSummScreenBxPalpability	RX_SUMM_SCREEN_BX_PALPABILITY
Scr/BX 1st Dtct	rxSummScreenBxFirstDetect	RX_SUMM_SCREEN_BX_FIRST_DETECT

SURGERY SECTION (ON CTC)

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
Surg Rev	rxSummSurgReviewed	RX_SUMM_SURG_REVIEWED
1st Recon	rxSummReconstruction1st	RX_SUMM_RECONSTRUCTION_1ST
Scope 98-02	rxSummScopeReg9802	RX_SUMM_SCOPE_REG_98_02
Scope 03+	rxSummScopeRegLnSur	RX_SUMM_SCOPE_REG_LN_SUR
Oth 98-02	rxSummSurgOth9802	RX_SUMM_SURG_OTH_98_02
Oth 03+	rxSummSurgOthRegDis	RX_SUMM_SURG_OTH_REG_DIS
Surg 73-97	rxSummSurgeryType	RX_SUMM_SURGERY_TYPE
Surg 98-02	rxSummSurgSite9802	RX_SUMM_SURG_SITE_98_02
Surg 03+	rxSummSurgPrimSite	RX_SUMM_SURG_PRIM_SITE
Rs No Surg	rxSummReasonForNoSurgery	RX_SUMM_REASON_FOR_NO_SURGERY
Approach	rxSummSurgicalApproach	RX_SUMM_SURGICAL_APPROACH
Margin	rxSummSurgicalMargins	RX_SUMM_SURGICAL_MARGINS
LN Exm 98-02	rxSummRegLnExamined	RX_SUMM_REG_LN_EXAMINED
Surg Dt	rxSummDtSurgeryYyyy	RX_SUMM_DT_SURGERY_YYYY
Surg Dt	rxSummDtSurgeryMm	RX_SUMM_DT_SURGERY_MM
Surg Dt	rxSummDtSurgeryDd	RX_SUMM_DT_SURGERY_DD
Most Def Surg Dt	rxSummDtMostDefinSurgYyyy	RX_SUMM_DT_MOST_DEFIN_SURG_YYYY
Most Def Surg Dt	rxSummDtMostDefinSurgMm	RX_SUMM_DT_MOST_DEFIN_SURG_MM
Most Def Surg Dt	rxSummDtMostDefinSurgDd	RX_SUMM_DT_MOST_DEFIN_SURG_DD

RADIATION SECTION (ON CTC)

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
Radtn Rev	rxSummRadiationReviewed	RX_SUMM_RAD_REVIEWED
Radtn	rxSummRadiation	RX_SUMM_RADIATION
Rs No Radtn	rxSummReasonForNoRad	RX_SUMM_REASON_FOR_NO_RAD
Radtn CNS	rxSummRadToCns	RX_SUMM_RAD_TO_CNS
Radtn Seq	rxSummSurgRadSeq	RX_SUMM_SURG_RAD_SEQ
Start Dt	rxSummDtRadiationYyyy	RX_SUMM_DT_RADIATION_YYYY
Start Dt	rxSummDtRadiationMm	RX_SUMM_DT_RADIATION_MM
Start Dt	rxSummDtRadiationDd	RX_SUMM_DT_RADIATION_DD

SYSTEMIC SECTION (ON CTC)

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
Systemic Rev	rxSummChemoReviewed	RX_SUMM_CHEMO_REVIEWED
Chemo	rxSummChemo	RX_SUMM_CHEMO
Hormone	rxSummHormone	RX_SUMM_HORMONE
BRM	rxSummBrm	RX_SUMM_BRM
HemoEndo	rxSummTransplntEndocr	RX_SUMM_TRANSPLNT_ENDOCR
Other	rxSummOther	RX_SUMM_OTHER
Palliative	rxSummPalliativeProc	RX_SUMM_PALLIATIVE_PROC
Systemic Seq	RXSummSystemicSurgSeq	RX_SUMM_SYSTEMIC_SURG_SEQ
Systemic Dt	rxSummDateSystemicYyyy	RX_SUMM_DATE_SYSTEMIC_YYYY
Systemic Dt	rxSummDateSystemicMm	RX_SUMM_DATE_SYSTEMIC_MM
Systemic Dt	rxSummDateSystemicDd	RX_SUMM_DATE_SYSTEMIC_DD
Oth Dt	rxSummDateOtherYyyy	RX_SUMM_DATE_OTHER_YYYY
Oth Dt	rxSummDateOtherMm	RX_SUMM_DATE_OTHER_MM
Oth Dt	rxSummDateOtherDd	RX_SUMM_DATE_OTHER_DD

NON-COURSE 1 (ON COURSE)

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
LN Exm 98-02	regLnRem	REG_LN_REM
Scope	scopeLnSu	SCOPE_LN_SU
Surg Other	surgOth	SURG_OTH
Surg	surg	SURG
Radtn	rad	RAD
Other	other	OTHER
BRM	brm	BRM
Chemo	chemo	CHEMO
Horm	horm	HORM
Calc Meth	calculationMethod	CALCULATION_METHOD
Course Dt	courseStartDateYyyy	COURSE_START_DATE_YYYY
Course Dt	courseStartDateMm	COURSE_START_DATE_MM
Course Dt	courseStartDateDd	COURSE_START_DATE_DD

The following table shows the fields used by the summarization.

TREATMENT PROCEDURE FIELDS

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
DX Proc 73-87	diagnosticProc7387	DIAGNOSTIC_PROC_73_87
DX/Stg (NonCa)	dxStgProc	DX_STG_PROC
Scr/BX Type	screenBxType	SCREEN_BX_TYPE
Scr/BX Guid	screenBxGuidance	SCREEN_BX_GUIDANCE
Scr/BX Appr	screenBxApproach	SCREEN_BX_APPROACH
Scr/BX Othr	screenBxOtherSite	SCREEN_BX_OTHER_SITE
Scr/BX Palp	screenBxPalpability	SCREEN_BX_PALPABILITY
Scr/BX 1st Dtct	screenBxFirstDetect	SCREEN_BX_FIRST_DETECT
1st Recon	reconstruction	RECONSTRUCTION
Scope 98-02	scopeReg9802	SCOPE_REG_98_02
Scope 03+	scopeRegLnSur	SCOPE_REG_LN_SUR
Oth 98-02	surgOth9802	SURG_OTH_98_02
Oth 03+	surgOthRegDis	SURG_OTH_REG_DIS
Surg 73-97	surgeryType	SURGERY_TYPE
Surg 98-02	surgSite9802	SURG_SITE_98_02
Surg 03+	surgPrimSite	SURG_PRIM_SITE
Rs No Surg	reasonNoSurgery	REASON_NO_SURGERY
Approach	surgicalApproach	SURGICAL_APPROACH
Margin	surgicalMargins	SURGICAL_MARGINS
LN Exm 98-02	regLnRemoved	REG_LN_REMOVED
Surg Dt	dtSurgery (Y, M, D)	DT_SURGERY_YYYY, MM, DD
Scope Dt	dtScopeRegLnSur (Y, M, D)	DT_SCOPE_REG_LN_SUR_YYYY, MM, DD
Oth Dt	dtSurgOthRegDis (Y, M, D)	DT_SURG_OTH_REG_DIS_YYYY, MM, DD
Radtn	radiation	RADIATION
Rs No Radtn	reasonNoRadiation	REASON_NO_RADIATION
Radtn CNS	radToCns	RAD_TO_CNS
Radtn Seq	surgRadSeq	SURG_RAD_SEQ
Radtn End Dt	dtRadiation (Y, M, D)	DT_RADIATION_YYYY, MM, DD
Radtn End Dt	dtRadiationEnded (Y, M, D)	DT_RADIATION_ENDED_YYYY, MM, DD
Chemo	chemo	CHEMO
Hormone	hormone	HORMONE
BRM	brm	BRM
HemoEndo	transplntEndocr	TRANSPLNT_ENDOCR
Other	other	OTHER
Palliative	palliativeProc	PALLIATIVE_PROC
Systemic Seq	systemicSurgSeq	SYSTEMIC_SURG_SEQ
Systemic Dt	dtSystemic (Y, M, D)	DT_SYSTEMIC_YYYY, MM, DD
Other Dt	dtOther (Y, M, D)	DT_OTHER_YYYY, MM, DD
Chemo Dt	dtChemo (Y, M, D)	DT_CHEMO_YYYY, MM, DD
Hormone Dt	dtHormone (Y, M, D)	DT_HORMONE_YYYY, MM, DD
BRM Dt	dtBrm (Y, M, D)	DT_BRM_YYYY, MM, DD
HemoEndo Dt	dtTransplntEndocr (Y, M, D)	DT_TRANSPLNT_ENDOCR_YYYY, MM, DD
Mst Def Surg Dt	dtMostDefinSurg (Y, M, D)	DT_MOST_DEFIN_SURG_YYYY, MM, DD

1.2. Determining the Diagnosis Year

Different steps of the summarization require comparing a given year to the CTC Diagnosis Year. Note that if the year is missing, the unknown year (9999) is used instead.

1.3. The TX/TXr Paradigm

The summarization requires making the distinction between the TX and the TXr Treatment Procedures. That distinction is registry-specific.

1.4. Standard Summarization Process

When summarizing a Course-1, each section is summarized individually. For each section, each field is also summarized individually (note that this is not totally true since some field summarizations depend on some other summarized values and a specific sequential order must be maintained within a section but this is more an implementation detail).

Each field summarization follows the same process. That process is described in the next figure.

Figure2: Standard Summarization Process Diagram

An important step of that process is merging the best TX and TXr results. That process itself is described in the following figure.

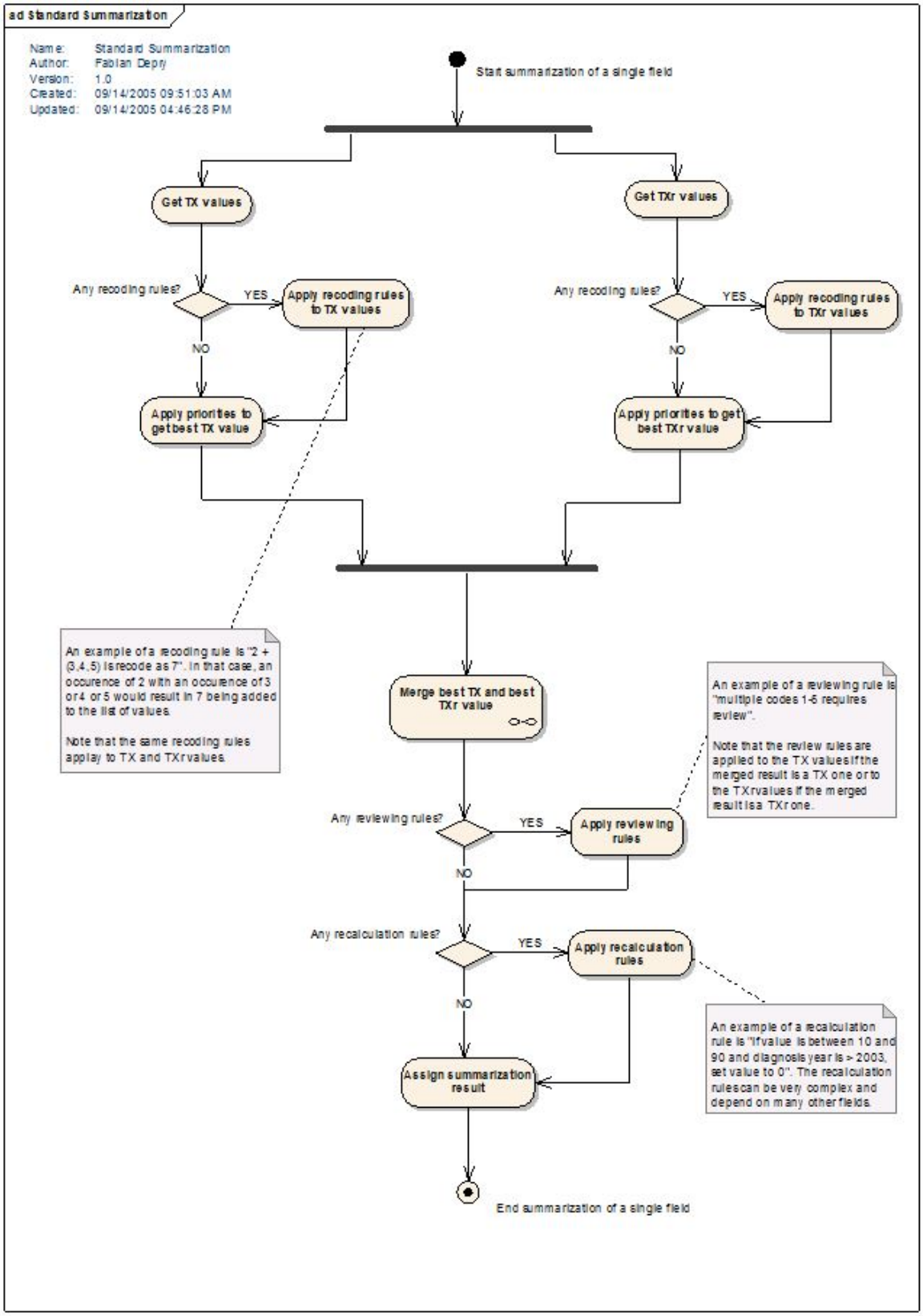
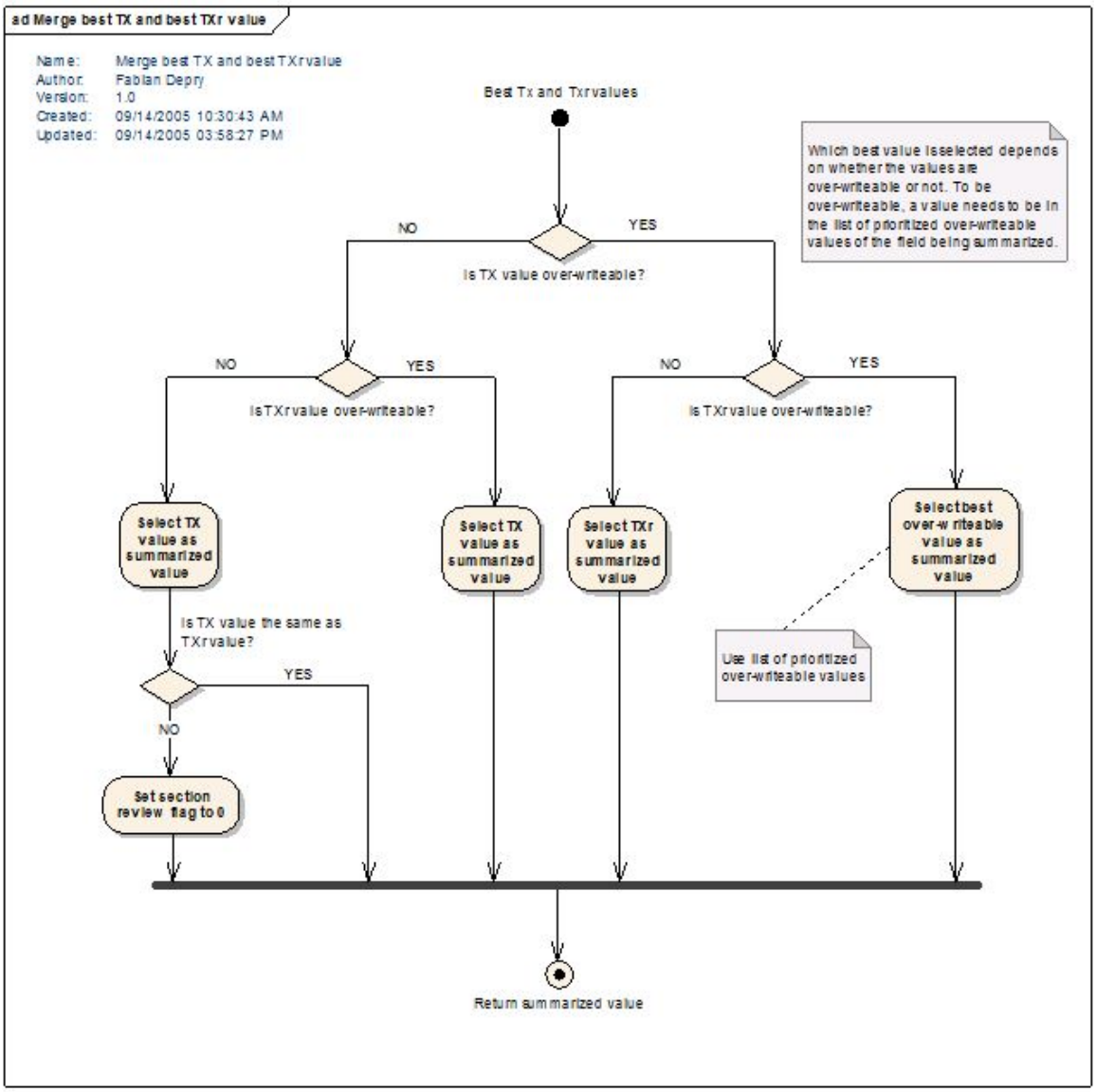


Figure3: Merging best TX and TXr results Process Diagram



Each summarized field has some specific attributes described in the following sections of this document:

- A priority list for the possible values of the field (required)
- A priority list of the over-writable values of the field
- Some recoding rules
- Some review rules
- Some recalculation rules
- A default value

The standard summarization process is applied to each summarized field, using the field specific attributes.

It could happen that the TX set or the TXr set is empty. In that case, the corresponding best value for that set will be the <*missing*> value. A <*missing*> is always worse than a <*non-missing*> value and is always over-writeable. Since a <*missing*> value is always possible for any field, it

has not been included in each priority and prioritized over-writeable lists described in the rest of this document. It could also happen that both the TX and the TXr set are empty (this is a very odd situation though). In that case, both best values will be <*missing*> and the resulting summarized value will also be <*missing*>. Note that if a value is not in a priority list, it is considered as having a worse priority than any value that is in the list.

Sometimes the summarization has to be done on a date field. The standard summarization process still applies in that case. Note that a date is over-writeable if it is 99/99/9999, 00/00/0000 or 88/88/8888 (or <*missing*>, see previous paragraph). Most of the date summarizations require determining the earliest or the latest date among a set of dates. For the purpose of determining an earliest date, the order from the worst to the best can be <*missing*>, 8-filled, 9-filled (unknown), 0-filled (known non-occurrence) and earliest real date (known occurrence) or <*missing*>, 8-filled, 0-filled, 9-filled and earliest real date depending on some condition explained in each individual summarization section. For the purpose of determining a latest date, the order from the worst to the best can be <*missing*>, 8-filled, 9-filled, 0-filled and latest real date or <*missing*>, 8-filled, 0-filled, 9-filled and latest real date depending on some condition explained in each individual summarization section. Real dates are compared by year, by month if year is the same and by day if year and month are the same. Known values are better than 9-filled values in such comparisons (12/15/2003 will be picked up instead of 12/99/2003).

1.5. Determining the Best Treatments

A few specific summarizations require calculating the "best" Treatment Procedures. Then instead of summarizing the fields from the set of TX/TXr on Course-1, they are summarized from the values only on those "best" Treatment Procedures. The "best" Treatment Procedures are defined as the ones having the best surgery value (and therefore, the fields depending on those "best" Treatment Procedures are called "surgery-dependent fields"). Depending on the DX year, the Surgery 73-97, 98-02 or 03+ will be summarized using the standard summarization process described in the next section. A best surgery value will be found and any Treatment Procedure with that best value will be added to the set of "best" Treatment Procedure.

Note that the best surgery code will be taken from a TX or from a TXr. When adding all Treatment Procedures having the best value to the "best" Treatment Procedures set, only the ones from the same family (TX or TXr) are considered. That means that the "best" Treatment Procedures are either all TX or all TXr. Also, since the standard summarization process is used to find the best surgery value, that process could require a review. When summarizing a surgery-dependent field, that field will require a review (setting the entire section flag to 0) if the process of determining the best Treatment Procedures requires a review.

1.6. Setting the Review Flags

The surgery, radiation and systemic sections have each a review flag.

A review flag can have three values: <*missing*>, 0 or 1. Those three values have the following meaning:

- <*missing*>: a user review is not required for this section
- 0: a user review is required for this section
- 1: a user already reviewed this section

If a flag for a particular section is set to 1, the summarization will not be run again on that section.

The summarization of a given section is a sequential process on each field of that section. The summarization of a particular single field could require a review. The flag for that section will be set to 0 if at least one of the fields of the section requires a user review. Otherwise the flag will be set to <*missing*>.

There are two ways a summarized field could require a review.

1. The merging process of the best TX and the best TXr result will require a review if both values are over-writeable and not the same.

2. Each field has its own review rules ("if multiple codes 1-5, needs review"). Note that the review rules will be applied to the set of TX values if the result of the merging process is the TX value, otherwise it will be applied to the set of TXr values.

1.7. Assigning Default Values

In the case where there is no Course-1 or it does not contain at least one non-deleted Treatment Procedure, default values are assigned to each summarized field. Those default values are provided in the next sections, as well as all the information necessary to perform the regular (Course-1) summarization.

2. MISCELLANEOUS SECTION SUMMARIZATION

2.1. DIAGNOSTIC_PROC_73_87

Summarized from: DIAGNOSTIC_PROC_73_87

Values priority: if [DX year <= 1982 and ICDO1 site in (196X, 1416, 1460, 1471, 1491, 1640, 1692) and ICDO1 histology in (9590-9698, 9750)] or [DX year is 1983-1987 and ICDO1 histology in (9590-9594, 9600-9642, 9650-9667, 9670-9698, 9702-9704, 9710, 9740-9750)] then use

99, 00, 10, 20, … 45

otherwise use

99, 00, 10, 20, … 90, 91

Over-writable values priority: 99, 00

Recoding rules: if [DX year <= 1982 and ICDO1 site in (196X, 1416, 1460, 1471, 1491, 1640, 1692) and ICDO1 histology in (9590-9698, 9750)] or [DX year is 1983-1987 and ICDO1 histology in (9590-9594, 9600-9642, 9650-9667, 9670-9698, 9702-9704, 9710, 9740-9750)] then use

10 + 30 -> 31
20 + 30 -> 32
10 + 40 -> 41
20 + 40 -> 42
30 + 40 -> 43
31 + 40 -> 44

32 + 40 -> 45
otherwise use
20 + 30 -> 40
(70, 80) + (20, 30, 40) -> 90
(70, 80) -> (50, 60) -> 91

Review rules: none

Recalculation rules: none

Default value: blank, except when
Type of Reporting Source < 6 AND
((DX year in 1973-1982 AND
EOD Coding System = 2)
OR
(DX year in 1983-1987 AND
((Site in C16x, C18x, C199, C209, C34x, C50x, C53x, C54x, C619, C67x) or
(Site = C44x and Hist02 in 8720-8790) or
(Hist02 in 9590-9595, 9650-9667, 9670-9698, 9702-9714, 9740-9741))))
in which case it is 00.

2.2. RX_SUMM_DX_STG_PROC

Summarized from: DX_STG_PROC

Values priority: 09, 00, 07, 01, 02, 03, 04, 05, 06

Over-writable values priority: 09, 00

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00

2.3. RX_SUMM_SCREEN_BX_TYPE

Summarized from: SCREEN_BX_TYPE

Values priority: 0, 9, 1, 2, 3, 4, 5, 6, 7, 8

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year < 2003, blank otherwise

2.4. RX_SUMM_SCREEN_BX_GUIDANCE

Summarized from: SCREEN_BX_GUIDANCE

Values priority: 0, 9, 1, 2, 3, 4, 5, 6, 7, 8

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year < 2003, blank otherwise

2.5. RX_SUMM_SCREEN_BX_APPROACH

Summarized from: SCREEN_BX_APPROACH

Values priority: 0, 9, 1, 2, 3, 4, 5, 6, 7, 8

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year < 2003, blank otherwise

2.6. RX_SUMM_SCREEN_BX_OTHER_SITE

Summarized from: SCREEN_BX_OTHER_SITE

Values priority: 0, 9, 1, 2, 3, 4, 5, 6, 7, 8

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year < 2003, blank otherwise

2.7. RX_SUMM_SCREEN_BX_PALPABILITY

Summarized from: SCREEN_BX_PALPABILITY

Values priority: 0, 9, 1, 2, 3, 4, 5, 6, 7, 8

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year < 2003, blank otherwise

2.8. RX_SUMM_SCREEN_BX_FIRST_DETECT

Summarized from: SCREEN_BX_FIRST_DETECT

Values priority: 0, 9, 1, 2, 3, 4, 5, 6, 7, 8

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year < 2003, blank otherwise

3. SURGERY SECTION SUMMARIZATION

3.1. RX_SUMM_RECONSTRUCTION_1ST

Note that this is a surgery-dependent field. The priority list is used only on the 'best treatments' (see section 1). That means there is no merging step and the over-writable values are not used.

Summarized from: RECONSTRUCTION

Values priority: 9, 0, 1, 2, 3, 4, 5, 6, 7, 8

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if 1998 <= DX year <= 2002, blank otherwise

3.2. RX_SUMM_SCOPE_REG_98_02

Summarized from: SCOPE_REG_98-02

Values priority: 9, 0, 1, 2, 3, 4, 5, 6, 7

Over-writable values priority: 9, 0

Recoding rules: none

Review rules:
If Site = C21x, C34x, C50x, C62x, C64x-C67x AND
multiple values of 1-5

This includes multiples of the same value.

Recalculation rules: none

Default value: 0 if 1998 <= DX year <= 2002, blank otherwise

3.3. RX_SUMM_SCOPE_REG_LN_SUR

Summarized from: SCOPE_REG_LN_SUR

Values priority: 9, 0, 1, 2, 3, 4, 5, 6, 7

Over-writable values priority: 9, 0

Recoding rules: 2 + (3, 4, 5) -> 7

Review rules:
If (Site = C50x AND multiple values of 1-7) OR
multiple different values of 1-7 OR
multiple values of 4

Some examples: 4+4 for all sites; 1+1 for C50X only; 1+6 for all sites.
1+1 for C34 would not get reviewed.

Recalculation rules: none

Default value: 0 if DX year is >= 2003 (or 9999), blank otherwise

3.4. RX_SUMM_SURG_OTH_98_02

Summarized from: SURG_OTH_98-02

Values priority: 9, 0, 1, 2, 3, 4, 5, 6, 7, 8

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: Multiple different values of 1-7

Recalculation rules: none

Default value: 0 if 1998 <= DX year <= 2002, blank otherwise

3.5. RX_SUMM_SURG_OTH_REG_DIS

Summarized from: SURG_OTH_REG_DIS

Values priority: 9, 0, 1, 2, 3, 4, 5

Over-writable values priority: 9, 0

Recoding rules: (2, 3, 4) + different value (2, 3, 4) -> 5

Review rules: Multiple different values of 1-5

Recalculation rules: none

Default value: 0 if DX year is >= 2003 (or 9999), blank otherwise

3.6. RX_SUMM_SURGERY_TYPE (1997 and before)

Summarized from: SURGERY_TYPE

Values priority: 09, 00, 07, 01, … 06, 90, 80, 88, 10, … 78

Over-writable values priority: 09, 00, 07, 01, … 06, 90, 80, 88

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00 if DX year is <= 1997, blank otherwise

3.7. RX_SUMM_SURG_SITE_98_02 (1998 – 2002)

Summarized from: SURG_SITE_98-02

Values priority: 99, 00, 90, 80, 10, … 79

Over-writable values priority: 99, 00, 90, 80

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00 if 1998 <= DX year <= 2002, blank otherwise

3.8. RX_SUMM_SURG_PRIM_SITE (2003 and after)

This is a very special case. Depending on the DX year, the regular summarization process or a conversion table will be used.

A. If DX year < 1998 or DX year > 2002, the regular summarization process is applied. In that case, the following characteristics are used:

Summarized from: SURG_PRIM_SITE

Values priority: priorities change by site and histology. See Appendix A.

Over-writable values priority: 99, 00, 90

Recoding rules: none

Review rules: none

B. If 1998 <= DX year <= 2002, SURG_PRIM_SITE is not used to summarize the field. Instead, the value is calculated from the following fields:

- PRIMARY_SITE (on the CTC)
- HISTOLOGY_ICDO3 (on the CTC, HISTOLOGY_ICDO2 is used if O3 value is blank)
- DIAGNOSTIC_CONFIRMATION (on the CTC)
- RX_SUMM_SURG_SITE_98_02 (must have already been summarized)
- RX_SUMM_SCOPE_REG_98_02 (must have already been summarized)
- RX_SUMM_RECONSTRUCTION_1ST (must have already been summarized)

The combination of those fields is used to find a unique value from the table SURGERY_02_03_CONVERSION; that value is then assigned to the summarized field. If any of those values is blank, the summarized field is set to blank too. If the combination of those fields do not correspond to exactly one result in the table, the summarized field is set to blank and the review flag is set to 0.

Default value: 00 if DX year >= 1998 (or 9999), blank otherwise

3.9. RX_SUMM_REASON_FOR_NO_SURGERY

Summarized from: REASON_NO_SURGERY

Values priority: 9, 1, 8, 6, 2, 5, 7, 0

Over-writable values priority: 9

Recoding rules: none

Review rules: if multiple different values 1-8, needs review

Recalculation rules: if the summarized site is between 10 and 90 inclusive, value is recoded to 0. Which summarized site field is selected depends on the DX year:

- DX year <= 1997: RX_SUMM_SURGERY_TYPE
- 1998 <= DX year <= 2002: RX_SUMM_SURG_SITE_98_02
- DX year >= 2003 (or 9999): RX_SUMM_SURG_PRIM_SITE

Default value: 6

3.10. RX_SUMM_SURGICAL_APPROACH

Note that this is a surgery-dependent field. The priority list is used only on the 'best treatments' (see section 1). That means there is no merging step and the over-writable values are not used.

Summarized from: SURGICAL_APPROACH

Values priority: 9, 0, 1, 2, 3, 4, 5, 6, 7

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year <= 2002, blank otherwise

3.11. RX_SUMM_SURGICAL_MARGINS

Note that this is a surgery-dependent field. The priority list is used only on the 'best treatments' (see section 1). That means there is no merging step and the over-writable values are not used.

Summarized from: SURGICAL_MARGINS

Values priority: 9, 0, 1, 2, 3, 4, 5, 7, 8

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 8

3.12. RX_SUMM_REG_LN_EXAMINED

Summarized from: REG_LN_REMOVED

Values priority: 99, 00, 95, 98, 96, 97, 01, 02, … 90

Over-writable values priority: 99, 00, 95, 98, 96, 97

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00 if 1998 <= DX Year <= 2002, blank otherwise

3.13. RX_SUMM_DT_SURGERY_YYYY, MM, DD

Summarized from: DT_SURGERY (YYYY, MM, DD), DT_SCOPE_REG_LN_SUR (YYYY, MM, DD) and DT_SURG_OTH_REG_DIS (YYYY, MM, DD).

Note that in some cases, the DT_SCOPE_REG_LN_SUR (YYYY, MM, DD) field will NOT be taken into account: if RX_SUMM_SCOPE_REG_98_02 or RX_SUMM_SCOPE_REG_LN_SUR (depending on the dx year) is 0 or 9, the scope date will not be taken into account, otherwise (if the result is between 1 and 8), it will be taken into account.

Values priority: earliest date. Depending on the year of diagnosis (dx year), 0-filleds dates will be worse or better than 9-filled dates:

- If dx year <= 1982: if RX_SUMM_SURGERY_TYPE is 09, 0-filled is better, otherwise 9-filled is better.
- If 1983 <= dx year <= 1997: if RX_SUMM_SURGERY_TYPE is 00, 0-filled is better, otherwise 9-filled is better.
- If 1998 <= dx year <= 2002: if RX_SUMM_SURG_SITE_98_02 is between 01 and 98 or if RX_SUMM_SCOPE_REG_98_02 is between 1 and 8 or if RX_SUMM_SURG_OTH_98_02 is between 1 and 9, 9-filled is better. Otherwise 0-filled is better.
- If dx year >= 2003: if RX_SUMM_SURG_PRIM_SITE is between 01 and 97 or if RX_SUMM_SCOPE_REG_LN_SUR is between 1 and 8 or if RX_SUMM_SURG_OTH_REG_DIS is between 1 and 9, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

3.14. RX_SUMM_DT_MOST_DEFIN_SURG_YYYY, MM, DD

Summarized from: DT_MOST_DEFIN_SURG (YYYY, MM, DD) and DT_SURGERY (YYYY, MM, DD).

Note that this is a surgery-dependent field. The priority list is used only on the 'best treatments' (see section 1). That means there is no merging step and the over-writable values are not used.

Values priority: latest date. Depending on the year of diagnosis (dx year), 0-filleds dates will be worse or better than 9-filled dates:

- If dx year <= 1982: if RX_SUMM_SURGERY_TYPE is 09, 0-filled is better, otherwise 9-filled is better.
- If 1983 <= dx year <= 1997: if RX_SUMM_SURGERY_TYPE is 00, 0-filled is better, otherwise 9-filled is better.
- If 1998 <= dx year <= 2002: if RX_SUMM_SURG_SITE_98_02 is between 01 and 98 or if RX_SUMM_SCOPE_REG_98_02 is between 1 and 8 or if RX_SUMM_SURG_OTH_98_02 is between 1 and 9, 9-filled is better. Otherwise 0-filled is better.

- If dx year >= 2003: if RX_SUMM_SURG_PRIM_SITE is between 01 and 97 or if RX_SUMM_SCOPE_REG_LN_SUR is between 1 and 8 or if RX_SUMM_SURG_OTH_REG_DIS is between 1 and 9, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: none

Recoding rules: none

Review rules: none

Recalculation rules:
A. If RX_SUMM_SURG_PRIM_SITE is 00 or 98, set date to 00/00/0000
B. If RX_SUMM_SURG_PRIM_SITE is 99, set date to 99/99/9999
C. If RX_SUMM_SURG_PRIM_SITE is any other value, find the DT_MOST_DEFIN_SURG from the best treatment. If multiple treatments exist, then find the latest date.
D. If the date from C is unknown (blank, 00/00/0000, 99/99/9999 or 88/88/8888):
1. Find the latest DT_MOST_DEFIN_SURG from all treatments (both TXs and TXrs).
2. Find the DT_SURGERY from the best treatment. If multiple treatments exist, then find the latest date
3. If the result is unknown (blank, 00/00/0000, 99/99/9999, or 88/88/8888) then use the unknown date from #1. Otherwise, take the latest date from 1 and 2.

Default value: none

4. RADIATION SECTION SUMMARIZATION

4.1. RX_SUMM_RADIATION

Summarized from: RADIATION

Values priority: 9, 0, 8, 7, 6, 5, 1, 2, 3, 4

Over-writable values priority: 9, 0, 8, 7

Recoding rules: 1 + (2, 3) -> 4

Review rules:
Multiple different values of 1-5 OR
8 + 7

Recalculation rules: none

Default value: 0

4.2. RX_SUMM_REASON_FOR_NO_RAD

Summarized from: REASON_NO_RADIATION

Values priority: 9, 1, 8, 6, 2, 5, 7, 0

Over-writable values priority: 9

Recoding rules: none

Review rules: if multiple different values 1-8 AND at least 1 value is not (1 6), needs review

Recalculation rules: if the summarized radiation (RX_SUMM_RADIATION) is between 1 and 5 inclusive, value is recoded to 0.

Default value: 1

4.3. RX_SUMM_RAD_TO_CNS

Summarized from: RAD_TO_CNS

Values priority: 9, 0, 8, 7, 1

Over-writable values priority: 9, 0, 8, 7

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0 if DX year is in 1988-1997 and Primary Site = C34x and ICDO2 Histology is in 9800-9941 and Type of Reporting Source is not 7, 9 otherwise.

4.4. RX_SUMM_SURG_RAD_SEQ

Summarized from: SURG_RAD_SEQ

Values priority: 9, 0, 2, 3, 4, 5, 7, 6

Over-writable values priority: 9, 0

Recoding rules: 2 + 3 -> 4
5 + (2, 3, 4, 7) -> 6

Review rules: if multiple different values 2-7, needs review

Recalculation rules:

A. Check whether both surgery and radiation have been given. Surgery has been given if RX_SUMM_REASON_FOR_NO_SURGERY is 0 or RX_SUMM_SCOPE_REG_LN_SUR is 1-8 or RX_SUMM_SURG_OTH_REG_DIS is 1-8. Radiation has been given if RX_SUMM_RADIATION is between 1 and 6 (inclusive) or RX_SUMM_RAD_TO_CNS is 1. If either surgery or radiation has not been given, the sequence is not recalculated. Otherwise the next step is executed.

B. Determine the most recent surgery and radiation dates among all Non-deleted TreatmentProcedures for the CTC's Course 1:

1. When SURGERY_TYPE = 10-98 or SURG_SITE_98_02 = 10-90 or SURG_PRIM_SITE = 10-90 or SCOPE_REG_LN_SUR is 1-8 or SCOPE_REG_98_02 = 1-8 or SURG_OTH_REG_DIS is 1-8 or SURG_OTH_98_02 = 1-8, a particular treatment's surgery date is considered, otherwise the treatment is ignored.

2. When RADIATION is between 1 and 6 (inclusive) or RAD_TO_CNS is 1, a particular treatment's radiation date is considered, otherwise the treatment is ignored.

C. If the resulting most recent surgery date is missing, all 0's or all 9's, calculate the earliest scope and other surgery dates (from DT_SCOPE_REG_LN_SUR_YYYY, MM, DD and DT_SURG_OTH_REG_DIS_YYYY, MM, DD) and replace the most recent surgery date by the earliest of those two dates.

D. Set RX_SUMM_SURG_RAD_SEQ based on the most recent surgery and radiation dates:

1. If either the most recent surgery date or the most recent radiation date is missing or all 0's, set RX_SUMM_SURG_RAD_SEQ to 0.

2. If either the most recent surgery date or the most recent radiation date is all 9's, set RX_SUMM_SURG_RAD_SEQ to 9.

3. If the original value of RX_SUMM_SURG_RAD_SEQ was 0 or 9,

a. set RX_SUMM_SURG_RAD_SEQ to 2 if the most recent radiation date is earlier than the most recent surgery date.

b. Set RX_SUMM_SURG_RAD_SEQ to 3 otherwise.

4. If the original value of RX_SUMM _SURG_RAD_SEQ was not 0 or 9, leave the field to its current value.

E. If both surgery and radiation were given but the best surgery date (as calculated after step C) is 9-filled, the radiation review flag is set to 0 (needs review).

Default value: 0

4.5. RX_SUMM_DT_RADIATION_YYYY

Summarized from: DT_RADIATION (YYYY, MM, DD)

Values priority: earliest date

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules:

A. If RX_SUMM_RADIATION is 1-6, calculate the earliest date considering only 9-filled dates and real dates; if all dates are null, set final date to 99/99/999

B. Else if either RX_SUMM_RADIATION or RX_SUMM_REASON_FOR_NO_RADIATION is 8, set final date to 88/88/8888.

C. Else if either RX_SUMM_RADIATION or RX_SUMM_REASON_FOR_NO_RADIATION is 7 or RX_SUMM_RADIATION is 0 set final date to 00/00/0000.

D. Else if either RX_SUMM_RADIATION or RX_SUMM_REASON_FOR_NO_RADIATION is 9, set final date to 99/99/9999.

E. Else leave the final date blank.

Default value: 00/00/0000

5. SYSTEMIC SECTION SUMMARIZATION

5.1. RX_SUMM_CHEMO

Summarized from: CHEMO

Values priority: 99, 00, 88, 86, 82, 85, 87, 01, 02, 03

Over-writable values priority: 99, 00, 88, 86, 82, 85, 87

Recoding rules: 02 + 02 -> 03

Review rules: if multiple values 01-02, needs review

Recalculation rules: none

Default value: 00

5.2. RX_SUMM_HORMONE

Summarized from: HORMONE

Values priority: 99, 00, 88, 86, 82, 85, 87, 01

Over-writable values priority: 99, 00, 88, 86, 82, 85, 87

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00

5.3. RX_SUMM_BRM

Summarized from: BRM

Values priority: 99, 00, 88, 86, 82, 85, 87, 01

Over-writable values priority: 99, 00, 88, 86, 82, 85, 87

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00

5.4. RX_SUMM_TRANSPLNT_ENDOCR

Summarized from: TRANSPLNT_ENDOCR

Values priority: 99, 00, 88, 86, 82, 85, 87, 10, 11, 12, 20, 30, 40

Over-writable values priority: 99, 00, 88, 86, 82, 85, 87

Recoding rules: 30 + (10, 11, 12, 20) -> 40

Review rules: none

Recalculation rules: none

Default value: 00

5.5. RX_SUMM_OTHER

Summarized from: OTHER

Values priority: 9, 0, 8, 7, 1, 2, 3, 6

Over-writable values priority: 9, 0, 8, 7

Recoding rules: none

Review rules: if multiple different values 1-6, needs review

Recalculation rules: none

Default value: 0

5.6. RX_SUMM_PALLIATIVE_PROC

Summarized from: PALLIATIVE_PROC

Values priority: 9, 0, 7, 1, 2, 3, 4, 5, 6

Over-writable values priority: 9, 0, 7

Recoding rules: (1, 2, 3) + (1, 2, 3,) -> 5
(1, 2, 3, 5) + 4 -> 6

Review rules: none

Recalculation rules: none

Default value: 0

5.7. RX_SUMM_SYSTEMIC_SURG_SEQ

Summarized from: SYSTEMIC_SURG_SEQ

Values priority: 9, 0, 2, 3, 4, 5, 7, 6

Over-writable values priority: 9, 0

Recoding rules: 2 + 3 -> 4
5 + (2, 3, 4, 7) -> 6

Review rules: if multiple different values 2-7, needs review

Recalculation rules: the following logic is applied:

A. Check whether both surgery and systemic have been given. Surgery has been given if RX_SUMM_REASON_FOR_NO_RADIATION is 0 or RX_SUMM_SCOPE_REG_LN_SUR is 1-8 or RX_SUMM_SURG_OTH_REG_DIS is 1-8. Systemic has been given if RX_SUMM_CHEMO is between 01 and 79 (inclusive) or RX_SUMM_HORMONE is between 01 and 79 (inclusive) or RX_SUMM_BRM is between 01 and 79 (inclusive) or RX_SUMM_TRANSPLT_ENDOCR is between 01 and 79 (inclusive) or RX_SUMM_OTHER is between 1 and 6 (inclusive). If either surgery or systemic has not been given, the sequence is not recalculated. Otherwise the next step is executed.

B. Determine the most recent surgery and systemic dates among all Non-deleted treatments for the CTC Course 1:

1. When SURGERY_TYPE = 10-98 or SURG_SITE_98_02 = 10-90 or SURG_PRIM_SITE = 10-90 or SCOPE_REG_LN_SUR is 1-8 or SCOPE_REG_98_02 = 1-8 or SURG_OTH_REG_DIS is 1-8 or SURG_OTH_98_02 = 1-8, a particular treatment's surgery date is considered, otherwise the treatment is ignored.

2. When CHEMO is between 01 and 79 (inclusive), or HORMONE is between 01 and 79 (inclusive), or BRM is between 01 and 79 (inclusive), or TRANSPLT_ENDOCR is between 01 and 79 (inclusive), or OTHER is between 1 and 6 (inclusive), a particular treatment's systemic date is considered, otherwise the treatment is ignored.

C. If the resulting most recent surgery date is missing, all 0's or all 9's, calculate the earliest scope and other surgery dates (from DT_SCOPE_REG_LN_SUR_YYYY, MM, DD and DT_SURG_OTH_REG_DIS_YYYY, MM, DD) and replace the most recent surgery date by the earliest of those two dates.

D. Set _SUMM_SYSTEMIC_SURG_SEQ based on the most recent surgery and systemic dates:

1. If either the most recent surgery date or the most recent systemic date is missing or all 0's, set RX_SUMM_SYSTEMIC_SURG_SEQ to 0.

2. If either the most recent surgery date or the most recent systemic date is all 9's, set RX_SUMM_SYSTEMIC_SURG_SEQ to 9.

3. If the original value of RX_SUMM_SYSTEMIC_SURG_SEQ was 0 or 9,
   a. set RX_SUMM_SYSTEMIC_SURG_SEQ to 2 if the most recent systemic date is earlier than the most recent surgery date.

   b. Set RX_SUMM_SYSTEMIC_SURG_SEQ to 3 otherwise.

4. If the original value of RX_SUMM_SYSTEMIC_SURG_SEQ was not 0 or 9, leave the field to its current value.

E. If both surgery and systemic were given but the best surgery date (as calculated after step C) is 9-filled, the systemic review flag is set to 0 (needs review).

Default value: 0 if DX year >= 2007 (not including 9999), blank otherwise

5.8. RX_SUMM_DATE_SYSTEMIC_YYYY, MM, DD

Summarized from: DT_SYSTEMIC (YYYY, MM, DD)

Values priority: earliest date. Depending on the value of the summarized systemic section fields, 0-filleds dates will be worse or better than 9-filled dates:

- If RX_SUMM_CHEMO, RX_SUMM_HORMONE, RX_SUMM_BRM or RX_SUMM_TRANSPLNT_ENDOCR is between 01 and 79, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

5.9. RX_SUMM_DATE_OTHER_YYYY, MM, DD

Summarized from: DT_OTHER (YYYY, MM, DD)

Values priority: earliest date. Depending on the value of RX_SUMM_OTHER, 0-filleds dates will be worse or better than 9-filled dates:

- If RX_SUMM_OTHER is between 1 and 6, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

6. NON-COURSE-1 SUMMARIZATION

Summarization of Non-Course-1 courses is a bit different. It uses the same mechanism as the Course-1 summarization but adds some extra steps for some of the fields. Also, the Non-Course-1 summarization saves the summarized field on the Course itself while the summarization of a Course-1 course is saved on the CTC.

Note that there is no default value for a Non-Course-1 summarization.

6.1. REG_LN_REM

Summarize REG_LN_REMOVED as described in section 3. Assign the summarized value to the Course REG_LN_REM.

6.2. SCOPE_LN_SU

Each Treatment Procedure contains two Scope fields: SCOPE_REG_98_02 and SCOPE_REG_LN_SUR. Which field is summarized depends on the DX year:

- DX year < 1998: leave SCOPE_LN_SU blank
- 1998 <= DX year <= 2002: summarize SCOPE_REG_98_02 as it is described in section 3
- DX year > 2002: summarize SCOPE_REG_LN_SUR as it is described in section 3

The result of the summarization is then assigned to the Course SCOPE_LN_SU.

6.3. SURG_OTH

Each Treatment Procedure contains two Scope fields: SURG_OTH_98_02 and SURG_OTH_REG_DIS. Which field is summarized depends on the DX year:

- DX year < 1998: leave SCOPE_LN_SU blank
- 1998 <= DX year <= 2002: summarize SURG_OTH_98_02 as it is described in section 3
- DX year > 2002: summarize SURG_OTH_REG_DIS as it is described in section 3

The result of the summarization is then assigned to the Course SURG_OTH.

6.4. SURG

Each Treatment Procedure contains three Surgery fields: SURGERY_TYPE, SURG_SITE_98_02 and SURGERY_PRIM_SITE. Which field is summarized depends on the DX year:

- DX year < 1998: summarize SURGERY_TYPE as it is described in section 3

- 1998 <= DX year <= 2002: summarize SURG_SITE_98_02 as it is described in section 3
- DX year > 2002: summarize SURG_PRIM_SITE as it is described in section 3

The result of the summarization is then assigned to the Course SURG.

6.5. RAD

Summarize RADIATION as described in section 4. Assign the summarized value to the Course RAD.

6.6. OTHER

Summarize OTHER as described in section 5. Assign the summarized value to the Course OTHER.

6.7. BRM

Summarize BRM and TRANSPLNT_ENDOCR as described in section 5. Assign the summarized value to the Course BRM using the following diagram.

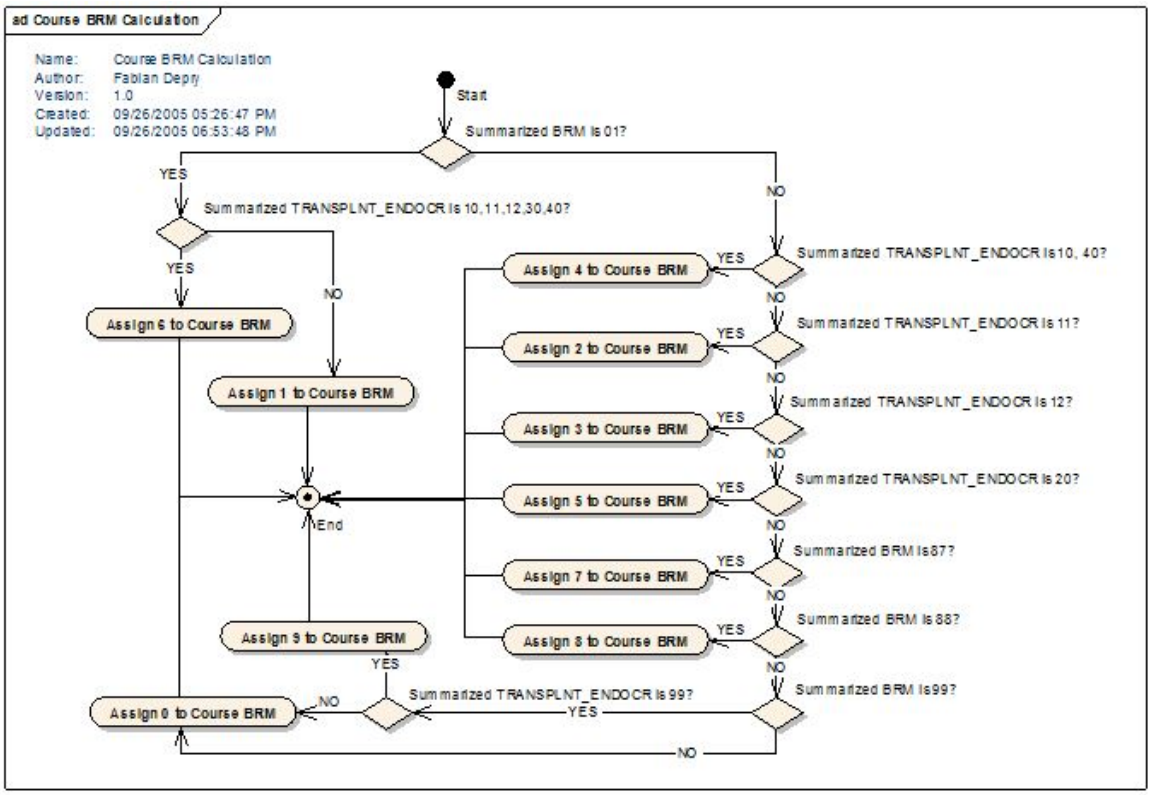


Figure4: Non-Course-1BRM Post-Summarization Process Diagram

6.8. CHEMO

Summarize CHEMO as described in section 5. Assign the summarized value to the Course CHEMO using the following diagram.

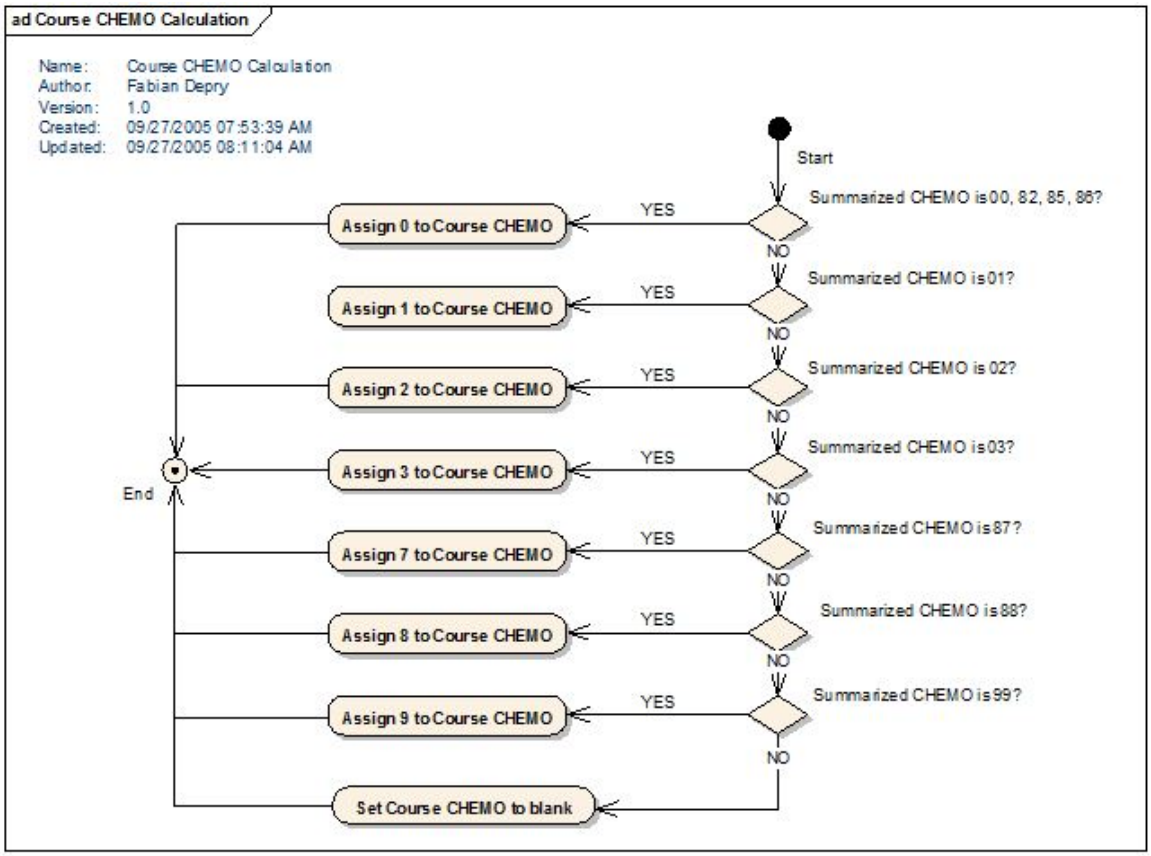


Figure5: Non-Course - CHEMO Post-Summarization Process Diagram

6.9. HORM

Summarize HORMONE and TRANSPLNT_ENDOCR as described in section 5. Assign the summarized value to the Course HORM using the following diagram.

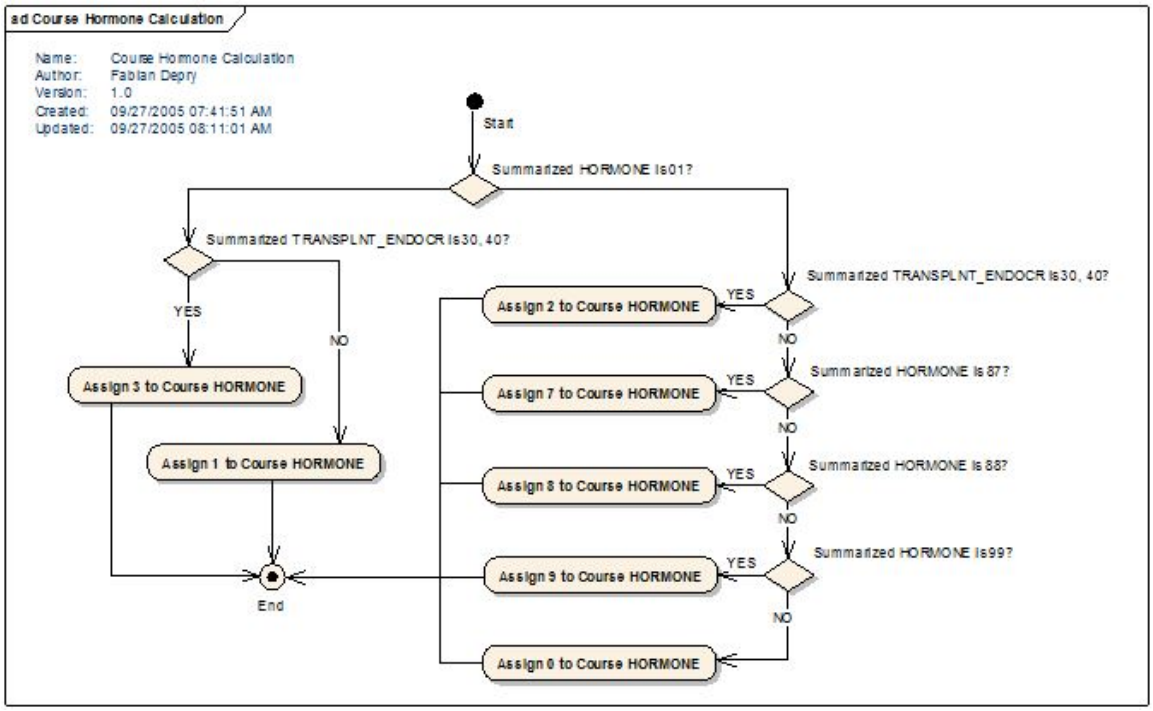


Figure6: Non-Course - HORM Post-Summarization Process Diagram

6.10. COURSE_START_DATE_YYYY, MM, DD

The summarization process is the same as for the Course-1 dates (calculate best TX date, calculate best TXr date and merge both result). The best date is the earliest among the following treatment dates:

- DT_SURGERY_YYYY, MM, DD
- DT_SCOPE_REG_LN_SUR_YYYY, MM, DD
- DT_SURG_OTH_REG_DIS_YYYY, MM, DD
- DT_RADIATION_YYYY, MM, DD
- DT_RADIATION_ENDED_YYYY, MM, DD
- DT_SYSTEMIC_YYYY, MM, DD
- DT_OTHER_YYYY, MM, DD
- DT_CHEMO_YYYY, MM, DD
- DT_HORMONE_YYYY, MM, DD
- DT_BRM_YYYY, MM, DD
- DT_TRANSPLNT_ENDOCR_YYYY, MM, DD
- DT_THERAPY_YYYY, MM, DD

For this summarization, a 0-filled could be better than a 9-filled date; the following rules are applied:

A 9-filled dates are better than 0-filled dates if, for the current course,
- any summary level Chemo, Hormone, BRM, TRANSPLNT_ENDOCR are between 01-79; or
- summary other tx is between 1-6; or
- summary radiation is between 1-6; or
- ydx >= 1998 and (for the appropriate ydx/data item)
    - surgery =01-98 or
    - scope = 1-9 or
    - other surg = 1-9; or
- ydx <= 1982 and surgery type != 09; or
- ydx 1983-1997 and surgery type != 00.

Otherwise, a 0-filled date is better than a 9-filled date.

6.11. CALCULATION_METHOD

Set Course CALCULATION_METHOD to 2 (SEER).

7. REGISTRY SPECIFIC SUMMARIZATION

7.1. Detroit – Registry-specific summarized fields

MISCELLANEOUS SECTION (ON CTC)

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
Mammogram	registryData.mammogram	MAMMOGRAM
Therapy Dt	registryData.dateOfTherapy (Y,M,D)	DATE_OF_THERAPY_YYYY, MM, DD (registry-specific)

Registry specific fields used in the summarization:

TREATMENT PROCEDURE FIELDS

DISPLAY NAME	APPLICATION NAME	DATABASE NAME
Mammogram	registryData.mammogram	MAMMOGRAM (registry-specific)
Therapy Dt	registryData.dateTherapy (Y, M, D)	DATE_THERAPY_YYYY, MM, DD (registry-specific)

7.1.1. Determining the Diagnosis Year

The regular process is applied (using the CTC Year of Diagnosis). If that year is unknown (9999), the earliest year of the Abstracted Dates of the CTC Facility Admissions is used.

7.1.2. TX/TXr Definition

The TX's are the non-deleted Treatment Procedures having a missing Reporting Facility or where the Reporting Facility is the same as the Treatment Facility. The TXr are the non-deleted Treatment Procedures with a Reporting Facility different than the Treatment Facility.

7.1.3. Summarization Process

The Detroit Summarization process is very similar to the standard process explained at the beginning of this document but not exactly the same. Instead of calculating a best TX value, a best TXr value and merging both, all the values are taken together (TX or TXr without distinction) and the priority list is applied to that set of value to get a best one. That process is described in the next Figure.

Note that the standard process is still used to set the review flag in case the best TX value is non over-writeable, as well as the best TXr value (and they are both different). Conceptually, the standard process is applied to set the review flag and then the Detroit specific process is applied to calculate a best summarized value (the Detroit specific process could also set the review flag for a given field, depending on the review rules of that particular field).

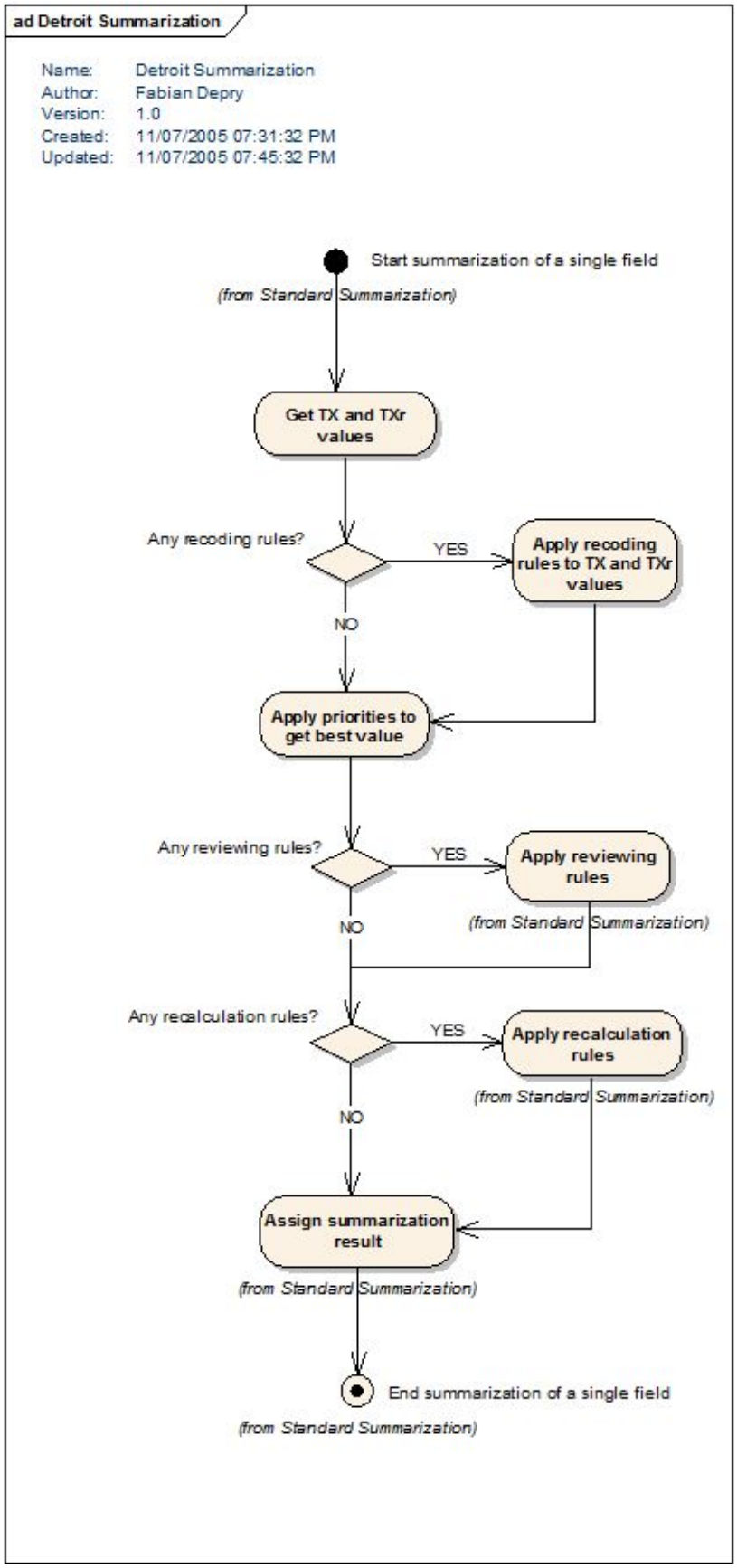

ad Detroit Summarization
Name: Detroit Summarization
Author: Fabian Depry
Version: 1.0
Created: 11/07/2005 07:31:32 PM
Updated: 11/07/2005 07:45:32 PM
Start summarization of a single field
(from Standard Summarization)
Get TX and TXr values
Any recoding rules?
YES
Apply recoding rules to TX and TXr values
NO
Apply priorities to get best value
Any reviewing rules?
YES
Apply reviewing rules
(from Standard Summarization)
NO
Any recalculation rules?
YES
Apply recalculation rules
(from Standard Summarization)
NO
Assign summarization result
(from Standard Summarization)
End summarization of a single field
(from Standard Summarization)

Figure7: Detroit Summarization Process

7.1.4. Summarizing MAMMOGRAM (Miscellaneous Section)

Summarized from: MAMMOGRAM

Values priority: 9, 0, 1

Over-writable values priority: 9, 0

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 0

7.1.5. Summarizing DATE_OF_THERAPY_YYYY, MM, DD

Summarized from: DT_THERPAY (YYYY, MM, DD)

Values priority: earliest date is the best; 9-filled dates are better than 0-filled dates.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

7.1.6. Summarizing RX_SUMM_SURG_PRIM_SITE

The process described in the regular summarization process is applied. After that, the following recalculation rule is applied: if the resulting summarized field has the value 88 and all the underlying non-deleted treatments (TX or TXr, we do not make the distinction) have the same surgery03 value and that value is different than 88, 00 or blank, it is used as the new summarized value. Note that a treatment having a surgery03 value of 00 is ignored in this process.

For example, suppose a CTC has two TX and one TXr, and the summarization of the field gave 88, the recalculation rules would give the following results:

TX1 value	TX2 value	TXr1 value	Recalculated code	Comment
23	23	23	23	all underlying codes agree
23	00	23	23	00 is ignored

TX1 value	TX2 value	TXr1 value	Recalculated code	Comment
23	blank	23	23	blank is ignored
23	88	23	88	codes do not all agree
23	23	24	88	codes do not all agree
0	0	0	88	all codes are ignored
88	88	88	88	resulting code would not be updated but it does not matter since it is the same as the old code…

7.1.7. Summarizing RX_SUMM_SURG_RAD_SEQ (Radiation Section)

The process is the same as the regular summarization but in the recalculation rules part B, the date of therapy is used instead of the surgery and radiation date.

7.1.8. Summarizing RX_SUMM_SYSTEMIC_SEQ (Systemic Section)

The process is the same as the regular summarization but in the recalculation rules part B, the date of therapy is used instead of the surgery and systemic date.

7.1.9. Summarizing COURSE_START_DATE (Non-Course-1)

The DATE_THERAPY_YYYY, MM, DD is added to the date fields used in the regular summarization.

7.2. New-Mexico (includes AK and CN)

Extra date fields are summarized in the systemic section:

7.2.1. RX_SUMM_DATE_CHEMO_YYY, MM, DD

Summarized from: DT_CHEMO (YYYY, MM, DD)

Values priority: earliest date. Depending on the value of RX_SUMM_CHEMO, 0-filleds dates will be worse or better than 9-filled dates:

- If RX_SUMM_CHEMO is between 01 and 79, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

7.2.2. RX_SUMM_DATE_BRM_YYY, MM, DD

Summarized from: DT_BRM (YYYY, MM, DD)

Values priority: earliest date. Depending on the value of RX_SUMM_CHEMO, 0-filleds dates will be worse or better than 9-filled dates:

- If RX_SUMM_BRM is between 01 and 79, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

7.2.3. RX_SUMM_DATE_HORMONE_YYY, MM, DD

Summarized from: DT_HORMONE (YYYY, MM, DD)

Values priority: earliest date. Depending on the value of RX_SUMM_CHEMO, 0-filleds dates will be worse or better than 9-filled dates:

- If RX_SUMM_HORMONE is between 01 and 79, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

7.2.4. RX_SUMM_DATE_TRANSPLNT_ENDOCR_YYY, MM, DD

Summarized from: DT_TRANSPLNT_ENDOCR (YYYY, MM, DD)

Values priority: earliest date. Depending on the value of RX_SUMM_CHEMO, 0-filleds dates will be worse or better than 9-filled dates:

- If RX_SUMM_TRANSPLNT_ENDOCR is between 01 and 79, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

7.3. Louisiana

Extra date fields are summarized in the radiation section:

7.3.1. RX_SUMM_DT_RAD_ENDED_YYYY, MM, DD

Summarized from: DT_RADIATION_ENDED (YYYY, MM, DD)

Values priority: latest date. Depending on the value of RX_SUMM_CHEMO, 0-filleds dates will be worse or better than 9-filled dates:

- If RX_SUMM_RADIATION is 1-6 or 9, 9-filled is better. Otherwise 0-filled is better.

Over-writable values priority: 88/88/8888, 00/00/0000, 99/99/9999

Recoding rules: none

Review rules: none

Recalculation rules: none

Default value: 00/00/0000

The summarization of some non-course-one fields is done differently in LA:

7.3.2. BRM (NON-COURSE-ONE)

The best BRM value is calculated using the following properties:

Summarized from: BRM

Values priority: 99, 00, 88, 86, 82, 85, 87, 01, 04, 02, 03, 05, 06

Over-writable values priority: 99, 00, 88, 86, 82, 85, 87

Recoding rules: 01 + (02-06) -> 06

Recalculation rules: if the best calculated value is blank, 82, 85 or 86, it is replaced by 00. Then only the second digit of the value is kept.

7.3.1. HORM (NON-COURSE-ONE)

The best BRM value is calculated using the following properties:

Summarized from: BRM

Values priority: 99, 00, 88, 86, 82, 85, 87, 01, 02, 03

Over-writable values priority: 99, 00, 88, 86, 82, 85, 87

Recoding rules: 01 + (02-03) -> 03

Recalculation rules: if the best calculated value is blank, 82, 85 or 86, it is replaced by 00. Then only the second digit of the value is kept.

7.4. Seattle

Extra fields are summarized in the radiation section:

7.4.1. RX_SUMM_RAD_REGIONAL_RX_MODALITY

Summarized from: RAD_REGIONAL_RX_MODALITY

Values priority: 99, 00, 98, 20-62, 85, 80 (85 and 80 are considered only for DX year 73-02)

Over-writable values priority: 99, 00

Recoding rules: 50-55/60-62 + 20-43 -> 4=80 (applied only if DX year is 73-02)

Review rules: none

Recalculation rules: if combined TX/TXr values are all 00 and 99 (and both values are present)

- if summarized radiation is 0, 7 or 8 then RX_SUMM_RAD_REGIONAL_RX_MODUALITY is set to 00
- if summarized radiation is 1-6 or 9 then RX_SUMM_RAD_REGIONAL_RX_MODUALITY is set to 99
- otherwise a review is needed

Default value: none

7.4.2. RX_SUMM_RAD_BOOST_RX_MODALITY

Summarized from: RAD_BOOST_RX_MODALITY

Values priority: 99, 00, 98, 20-62

Over-writable values priority: 99, 00

Recoding rules: none

Review rules: none

Recalculation rules: if combined TX/TXr values are all 00 and 99 (and both values are present)
- if summarized radiation is 0, 7 or 8 then RX_SUMM_RAD_BOOST_RX_MODALITY is set to 00
- if summarized radiation is 1-6 or 9 then RX_SUMM_RAD_BOOST_RX_MODALITY is set to 99
- otherwise a review is needed

Default value: none

7.5. New-Jersey

Extra fields are summarized in the radiation section:

7.5.1. RX_SUMM_RAD_REGIONAL_RX_MODALITY

Summarized from: RAD_REGIONAL_RX_MODALITY

Values priority:
- 99, 00, 98, 20-32, 40-43, 40-43, 50-55, 60-62, 80, 85 (80 and 85 are considered only for DX year 73-02) if summarized radiation is 1-5
- 00, 99, 98, 20-32, 40-43, 40-43, 50-55, 60-62, 80, 85 (80 and 85 are considered only for DX year 73-02) if summarized radiation is not 1-5

Over-writable values priority: none

Recoding rules: none

Review rules: none

Recalculation rules: if combined TX/TXr values are all 00 and 99 (and both values are present)

- if summarized radiation is 0, 7 or 8 then RX_SUMM_RAD_REGIONAL_RX_MODUALITY is set to 00
- if summarized radiation is 1-6 or 9 then RX_SUMM_RAD_REGIONAL_RX_MODUALITY is set to 99
- otherwise a review is needed

Default value: none

7.5.2. RX_SUMM_RAD_BOOST_RX_MODALITY

Summarized from: RAD_BOOST_RX_MODALITY

Values priority: 99, 00, 98, 20-62

Over-writable values priority: 99, 00

Recoding rules: none

Review rules: none

Recalculation rules: if combined TX/TXr values are all 00 and 99 (and both values are present)

- if summarized radiation is 0, 7 or 8 then RX_SUMM_RAD_BOOST_RX_MODALITY is set to 00
- if summarized radiation is 1-6 or 9 then RX_SUMM_RAD_BOOST_RX_MODALITY is set to 99
- otherwise a review is needed

Default value: none

7.6. New-York

Extra fields are summarized in the radiation section:

7.6.1. RX_SUMM_RAD_REGIONAL_RX_MODALITY

Summarized from: RAD_REGIONAL_RX_MODALITY

Values priority: 99, 00, 98, 20-62, 85, 80 (85 and 80 are considered only for DX year 73-02)

Over-writable values priority: 99, 00

Recoding rules: 50-55/60-62 + 20-43 -> 4=80 (applied only if DX year is 73-02)

Review rules: none

Recalculation rules: if combined TX/TXr values are all 00 and 99 (and both values are present)

- if summarized radiation is 0, 7 or 8 then RX_SUMM_RAD_REGIONAL_RX_MODUALITY is set to 00
- if summarized radiation is 1-6 or 9 then RX_SUMM_RAD_REGIONAL_RX_MODUALITY is set to 99
- otherwise a review is needed

Default value: none

7.6.2. RX_SUMM_RAD_BOOST_RX_MODALITY

Summarized from: RAD_BOOST_RX_MODALITY

Values priority: 99, 00, 98, 20-62

Over-writable values priority: 99, 00

Recoding rules: none

Review rules: none

Recalculation rules: if combined TX/TXr values are all 00 and 99 (and both values are present)

- if summarized radiation is 0, 7 or 8 then RX_SUMM_RAD_BOOST_RX_MODALITY is set to 00
- if summarized radiation is 1-6 or 9 then RX_SUMM_RAD_BOOST_RX_MODALITY is set to 99
- otherwise a review is needed

Default value: none

7.6.3. RX_SUMM_SURG_PRIM_SITE

Default value: if DX year >= 1998 (or 9999)

- If CTC.rx_summ_surg_prim_site = 00 and any of the following conditions are met, set to 98:
    - Primary Site is in (C420, C421, C423, C424, C760-C765, C767, C768, C809)
    - Histology ICD-O-3 (2001+) is in (9764, 9800-9809, 9832, 9840-9920, 9931, 9945, 9946, 9950, 9960-9964, 9980-9989)
    - Histology ICD-O-3 (2001+) is in (9750, 9760-9762, 9811-9818, 9820, 9826, 9831, 9833-9837, 9940, 9948) and Date of Diagnosis Year is before 2010
    - Histology ICD-O-3 (2001+) is in (9727, 9733, 9741, 9742, 9765-9769, 9930, 9965-9967, 9975, 9991, 9992) and Date of Diagnosis Year is 2010 or later

- Otherwise set to 00

7.6.4. RX_SUMM_SURGICAL_MARGINS

Default value:

- If any of the following are true, set to 9:
  - Primary site = C420, C421, C423, or C424, C760-C768, C809 (C422 is NOT included)
  - Date of diagnosis < 2010 and (
    histology ICDO3 = [9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989] OR
    (histology ICDO3 = [9590-9596, 9650-9699, 9702-9719, 9727-9729] AND Primary Site = C770-C779)
)
  - Date of diagnosis >= 2010 and (
    histology ICDO3 = [9727, 9733, 9741-9742, 9764-9809, 9832, 9840-9931, 9945-9946, 9950-9967, 9975-9992] OR
    (histology ICDO3 = [9590-9726, 9728-9732, 9734-9740, 9750-9762, 9811-9831, 9940, 9948, 9971] AND Primary Site = C770-C779)
)
- Otherwise set to 8

7.6.5. CALCULATION_METHOD (NON-COURSE ONE)

Set Course CALCULATION_METHOD to 1 (COC).

7.7. Minnesota

Extra fields are summarized in the radiation section:

7.7.1. RX_SUMM_RAD_LOCATION_OF_RX

Summarized from: RAD_LOCATION_OF_RX

Values priority: none

Over-writable values priority: none

Recoding rules: none

Review rules: none

Recalculation rules: if a best radiation TX was found, take RAD_LOCATION_OF_RX from that TX

- if RX_SUMM_RADIATION is 0, 7 or 8 then RX_SUMM_RAD_LOCATION_OF_RX is set to 0
- if RX_SUMM_RADIATION is 9 then RX_SUMM_RAD_LOCATION_OF_RX is set to 9
- otherwise a review is needed

Default value: none

APPENDIX A – SURGERY PRIORITY LISTS

Site-Specific Surgery Codes
Oral Cavity
Lip C000–C009, Base of Tongue C019, Other Parts of Tongue C020–C029,
Gum C030–C039, Floor of Mouth C040–C049, Palate C050–C059,
Other Parts of Mouth C060–C069
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	30	Wide excision, NOS
16	40	Radical excision of tumor, NOS
17	41	Radical excision of tumor ONLY
18	42	Combination of 41 WITH resection in continuity with mandible (marginal, segmental, hemi-, or total
19	43	Combination of 41 WITH resection in continuity with maxilla (partial, subtotal, or total resection)
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Parotid and Other Unspecified Glands
Parotid Gland C079, Major Salivary Glands C080–C089
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	30	Less than total parotidectomy, NOS; less than total removal of major salivary gland, NOS
16	31	Facial nerve spared
17	32	Facial nerve sacrificed
18	33	Superficial lobe ONLY
19	34	Facial nerve spared
20	35	Facial nerve sacrificed
21	36	Deep lobe (Total)
22	37	Facial nerve spared
23	38	Facial nerve sacrificed
24	40	Total parotidectomy, NOS; total removal of major salivary gland, NOS
25	41	Facial nerve spared
26	42	Facial nerve sacrificed
27	50	Radical parotidectomy, NOS; radical removal of major salivary gland, NOS
28	51	without removal of temporal bone

Hierarchy	Surgery Code	Description
29	52	with removal of temporal bone
30	53	with removal of overlyikng skin (requires graft or flap coverage)
14.5	80	Parotidectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Pharynx
Tonsil C090–C099, Oropharynx C100–C109, Nasopharynx C110–C119
Pyriform Sinus C129, Hypopharynx C130–C139, Pharynx C140
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	15	Stripping
8	20	Local tumor excision, NOS
9	21	Photodynamic therapy (PDT)
10	22	Electrocautery
11	23	Cryosurgery
12	24	Laser ablation
13	25	Laser excision
14	26	Polypectomy
15	27	Excisional biopsy
16	28	Stripping
17	30	Pharyngectomy, NOS
18	31	Limited/partial pharyngectomy; tonsillectomy, bilateral tonsillectomy
19	32	Total pharyngectomy
20	40	Pharyngectomy WITH laryngectomy OR removal of contiguous bone tissue, NOS

Hierarchy	Surgery Code	Description
21	41	WITH laryngectomy (laryngopharyngectomy)
22	42	WITH bone [mandibulectomy]
23	43	WITH both 41 and 42
24	50	Radical pharyngectomy (includes total mandibular resection), NOS
25	51	WITHOUT laryngectomy
26	52	WITH laryngectomy
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Esophagus
C150–C159
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	30	Partial esophagectomy
16	40	Total esophagectomy, NOS
17	50	Esophagectomy, NOS WITH laryngectomy and/or gastrectomy, NOS

Hierarchy	Surgery Code	Description
18	51	WITH laryngectomy
19	52	WITH gastrectomy, NOS
20	53	Partial gastrectomy
21	54	Total gastrectomy
22	55	Combination of 51 WITH any of 52–54
14.5	80	Esophagectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Stomach
C160–C169
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	30	Gastrectomy, NOS (partial, subtotal, hemi-)
16	31	Antrectomy, lower (distal-less than 40% of stomach)***

Hierarchy	Surgery Code	Description
17	32	Lower (distal) gastrectomy (partial, subtotal, hemi-)
18	33	Upper (proximal) gastrectomy (partial, subtotal, hemi-)
19	40	Near-total or total gastrectomy, NOS
20	41	Near-total gastrectomy
21	42	Total gastrectomy
22	50	Gastrectomy, NOS WITH removal of a portion of esophagus
23	51	Partial or subtotal gastrectomy
24	52	Near total or total gastrectomy
25	60	Gastrectomy with a resection in continuity with the resection of other organs, NOS***
26	61	Partial or subtotal gastrectomy, in continuity with the resection of other organs***
27	62	Near total or total gastrectomy, in continuity with the resection of other organs***
28	63	Radical gastrectomy, in continuity with the resection of other organs***
14.5	80	Gastrectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Colon
C180–C189
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery

Hierarchy	Surgery Code	Description
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy, NOS
14	27	Excisional biopsy
15	28	Polypectomy-endoscopic
16	29	Polypectomy-surgical excision
17	30	Partial colectomy, [but less than hemicolectomy] segmental resection
18	32	Plus resection of contiguous organ; example: small bowel, bladder
19	40	Subtotal colectomy/hemicolectomy (total right or left colon and a portion of transverse colon)
20	41	Plus resection of contiguous organ; example: small bowel, bladder
21	50	Total colectomy (removal of colon from cecum to the rectosigmoid junction; may include a portion of the rectum)
22	51	Plus resection of contiguous organ; example: small bowel, bladder
23	60	Total proctocolectomy (removal of colon from cecum to the rectosigmoid junction, including the entire rectum)
24	61	Plus resection of contiguous organ; example: small bowel, bladder
25	70	Colectomy or coloproctotectomy with resection of contiguous organ(s), NOS (where there is not enough information to code 32, 41, 51, or 61)
16.5	80	Colectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Rectosigmoid
C199
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery

Hierarchy	Surgery Code	Description
6	14	Laser ablation
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	30	Wedge or segmental resection; partial proctosigmoidectomy, NOS
16	31	Plus resection of contiguous organs; example: small bowel, bladder
17	40	Pull through WITH sphincter preservation (colo-anal anastomosis)
18	50	Total proctectomy
19	51	Total colectomy
20	55	Total colectomy WITH ileostomy, NOS
21	56	Ileorectal reconstruction
22	57	Total colectomy WITH other pouch; example: Koch pouch
23	60	Total proctocolectomy, NOS [combination of 50 and 51]
24	65	Total proctocolectomy WITH ileostomy, NOS
25	66	Total proctocolectomy WITH ileostomy and pouch
26	70	Colectomy or proctocolectomy resection in continuity with other organs; pelvic exenteration
14.5	80	Colectomy, NOS; Proctectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Rectum
C209
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	28	Curette and fulguration
16	30	Wedge or segmental resection; partial proctectomy, NOS
17	40	Pull through WITH sphincter preservation (colo-anal anastomosis)
18	50	Total proctectomy
19	60	Total proctocolectomy, NOS
20	70	Proctectomy or proctocolectomy with resection in continuity with other organs; pelvic exenteration
15.5	80	Proctectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Anus
C210–C218
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	15	Thermal ablation
8	20	Local tumor excision, NOS
9	21	Photodynamic therapy (PDT)
10	22	Electrocautery
11	23	Cryosurgery
12	24	Laser ablation
13	25	Laser excision
14	26	Polypectomy
15	27	Excisional biopsy
16	60	Abdominal perineal resection, NOS (APR; Miles procedure)
17	61	APR and sentinel node excision
18	62	APR and unilateral inguinal lymph node dissection
19	63	APR and bilateral inguinal lymph node dissection
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Liver and Intrahepatic Bile Ducts
C220–C221
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	15	Alcohol (Percutaneous Ethanol Injection-PEI)
8	16	Heat-Radio-frequency ablation (RFA)
9	17	Other (ultrasound, acetic acid)
10	20	Wedge or segmental resection, NOS
11	21	Wedge resection
12	22	Segmental resection, NOS
13	23	One
14	24	Two
15	25	Three
16	26	Segmental resection AND local tumor destruction
17	30	Lobectomy, NOS
18	36	Right lobectomy
19	37	Left lobectomy
20	38	Lobectomy AND local tumor destruction
21	50	Extended lobectomy, NOS (extended: resection of a single lobe plus a segment of another lobe)
22	51	Right lobectomy
23	52	Left lobectomy
24	59	Extended lobectomy AND local tumor destruction
25	60	Hepatectomy, NOS
26	61	Total hepatectomy and transplant
27	65	Excision of a bile duct (for an intrahepatic bile duct primary only)
28	66	Excision of a bile duct PLUS partial hepatectomy

Hierarchy	Surgery Code	Description
29	75	Bile duct and hepatectomy WITH transplant
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Pancreas
C250–C259
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	25	Local excision of tumor, NOS
3	30	Partial pancreatectomy, NOS; example: distal
4	35	Local or partial pancreatectomy and duodenectomy
5	36	WITHOUT distal/partial gastrectomy
6	37	WITH partial gastrectomy (Whipple)
7	40	Total pancreatectomy
8	60	Total pancreatectomy and subtotal gastrectomy or duodenectomy
9	70	Extended pancreatoduodenectomy
2.5	80	Pancreatectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Larynx
C320–C329
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	15	Stripping
8	20	Local tumor excision, NOS
9	21	Photodynamic therapy (PDT)
10	22	Electrocautery
11	23	Cryosurgery
12	24	Laser ablation
13	25	Laser excision
14	26	Polypectomy
15	27	Excisional biopsy
16	28	Stripping
17	30	Partial excision of the primary site, NOS; subtotal/partial laryngectomy NOS; hemilaryngectomy NOS
18	31	Vertical laryngectomy
19	32	Anterior commissure laryngectomy
20	33	Supraglottic laryngectomy
21	40	Total or radical laryngectomy, NOS
22	41	Total laryngectomy ONLY
23	42	Radical laryngectomy ONLY
24	50	Pharyngolaryngectomy
16.5	80	Laryngectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Lung
C340–C349
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	12	Laser ablation or cryosurgery
3	13	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
4	15	Local tumor destruction, NOS
5	19	Local tumor destruction or excision, NOS
6	20	Excision or resection of less than one lobe, NOS
7	21	Wedge resection
8	22	Segmental resection, including lingulectomy
9	23	Excision, NOS
10	24	Laser excision
11	25	Bronchial sleeve resection ONLY
12	30	Resection of [at least one] lobe or bilobectomy, but less than the whole lung (partial pneumonectomy,
13	33	Lobectomy WITH mediastinal lymph node dissection
14	45	Lobe or bilobectomy extended, NOS
15	46	WITH chest wall
16	47	WITH pericardium
17	48	WITH diaphragm
18	55	Pneumonectomy, NOS
19	56	WITH mediastinal lymph node dissection (radical pneumonectomy)
20	65	Extended pneumonectomy
21	66	Extended pneumonectomy plus pleura or diaphragm
22	70	Extended radical pneumonectomy
10.5	80	Resection of lung, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Skin
C440–C449
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser ablation
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	30	Biopsy of primary tumor followed by a gross excision of the lesion (does not have to be done under the
16	31	Shave biopsy followed by a gross excision of the lesion
17	32	Punch biopsy followed by a gross excision of the lesion
18	33	Incisional biopsy followed by a gross excision of the lesion
19	34	Mohs surgery, NOS
20	35	Mohs with 1-cm margin or less
21	36	Mohs with more than 1-cm margin
22	45	Wide excision or reexcision of lesion or minor (local) amputation with margins more than 1 cm, NOS.
23	46	WITH margins more than 1 cm and less than or equal to 2 cm
24	47	WITH margins greater than 2 cm
25	60	Major amputation
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
BONES, JOINTS, AND ARTICULAR CARTILAGE C400–C419
PERIPHERAL NERVES AND AUTONOMIC NERVOUS SYSTEM C470–C479
CONNECTIVE, SUBCUTANEOUS, AND OTHER SOFT TISSUES C490–C499
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	15	Local tumor destruction
3	19	Local tumor destruction or excision, NOS
4	25	Local excision
5	26	Partial resection
6	30	Radical excision or resection of lesion WITH limb salvage
7	40	Amputation of limb
8	41	Partial amputation of limb
9	42	Total amputation of limb
10	50	Major amputation, NOS
11	51	Forequarter, including scapula
12	52	Hindquarter, including ilium/hip bone
13	53	Hemipelvectomy, NOS
14	54	Internal hemipelvectomy
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Breast
C500–C509
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	19	Local tumor destruction, NOS
3	20	Partial mastectomy, NOS; less than total mastectomy, NOS
4	21	Partial mastectomy WITH nipple resection
5	22	Lumpectomy or excisional biopsy
6	23	Reexcision of the biopsy site for gross or microscopic residual disease
7	24	Segmental mastectomy (including wedge resection, quadrantectomy, tylectomy)
8	30	Subcutaneous mastectomy
9	40	Total (simple) mastectomy, NOS
10	41	WITHOUT removal of uninvolved contralateral breast
11	43	Reconstruction, NOS
12	44	Tissue
13	45	Implant
14	46	Combined (Tissue and implant)
15	42	WITH removal of uninvolved contralateral breast
16	47	Reconstruction, NOS
17	48	Tissue
18	49	Implant
19	75	Combined (Tissue and implant)
20	50	Modified radical mastectomy
21	51	WITHOUT removal of uninvolved contralateral breast
22	53	Reconstruction, NOS
23	54	Tissue
24	55	Implant
25	56	Combined (Tissue and Implant)
26	52	WITH removal of uninvolved contralateral breast
27	57	Reconstruction, NOS
28	58	Tissue

Hierarchy	Surgery Code	Description
29	59	Implant
30	63	Combined (Tissue and Implant)
31	60	Radical mastectomy, NOS
32	61	WITHOUT removal of uninvolved contralateral breast
33	64	Reconstruction, NOS
34	65	Tissue
35	66	Implant
36	67	Combined (Tissue and Implant)
37	62	WITH removal of uninvolved contralateral breast
38	68	Reconstruction, NOS
39	69	Tissue
40	73	Implant
41	74	Combined (Tissue and Implant)
42	70	Extended radical mastectomy
43	71	WITHOUT removal of uninvolved contralateral breast
44	72	WITH removal of uninvolved contralateral breast
45	76	Bilateral mastectomy for a single tumor involving both breasts, as for bilateral inflammatory carcinoma
7.5	80	Mastectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Cervix Uteri
C530–C539
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	15	Loop Electrocautery Excision Procedure (LEEP)
8	16	Laser ablation
9	17	Thermal ablation
10	20	Local tumor excision, NOS
11	26	Excisional biopsy, NOS
12	27	Cone biopsy
13	24	Cone biopsy WITH gross excision of lesion
14	29	Trachelectomy; removal of cervical stump; cervicectomy
15	21	Electrocautery
16	22	Cryosurgery
17	23	Laser ablation or excision
18	25	Dilatation and curettage; endocervical curettage (for insitu only)
19	28	Loop electrocautery excision procedure (LEEP)
20	30	Total hysterectomy (simple, pan-) WITHOUT removal of tubes and ovaries
21	40	Total hysterectomy (simple, pan-) WITH removal of tubes and/or ovary
22	50	Modified radical or extended hysterectomy; radical hysterectomy; extended radical hysterectomy
23	51	Modified radical hysterectomy
24	52	Extended hysterectomy
25	53	Radical hysterectomy; Wertheim procedure
26	54	Extended radical hysterectomy
27	60	Hysterectomy, NOS, WITH or WITHOUT removal of tubes and ovaries
28	61	WITHOUT removal of tubes and ovaries

Hierarchy	Surgery Code	Description
29	62	WITH removal of tubes and ovaries
30	70	Pelvic exenteration
31	71	Anterior exenteration
32	72	Posterior exenteration
33	73	Total exenteration
34	74	Extended exenteration
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Corpus Uteri
C540–C559
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

[SEER Note: For invasive cancers, dilation and curettage is NOT coded as Surgery of Primary Site]

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	19	Local tumor destruction or excision, NOS
3	10	Local tumor destruction, NOS
4	11	Photodynamic therapy (PDT)
5	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
6	13	Cryosurgery
7	14	Laser
8	15	Loop Electrocautery Excision Procedure (LEEP)
9	16	Thermal ablation
10	20	Local tumor excision, NOS; simple excision, NOS
11	24	Excisional biopsy
12	25	Polypectomy
13	26	Myomectomy
14	21	Any combination of 20 or 24–26 WITH Electrocautery

Hierarchy	Surgery Code	Description
15	22	Any combination of 20 or 24–26 WITH Cryosurgery
16	23	Any combination of 20 or 24–26 WITH Laser ablation or excision
17	30	Subtotal hysterectomy/supracervical hysterectomy/fundectomy WITH or WITHOUT removal of tube(s) and ovary(ies)
18	31	WITHOUT tube(s) and ovary(ies)
19	32	WITH tube(s) and ovary(ies)
20	40	Total hysterectomy (simple, pan-) WITHOUT removal of tube(s) and ovary(ies)
21	50	Total hysterectomy (simple, pan-) WITH removal of tube(s) and/or ovary(ies)
22	60	Modified radical or extended hysterectomy; radical hysterectomy; extended radical hysterectomy
23	61	Modified radical hysterectomy
24	62	Extended hysterectomy
25	63	Radical hysterectomy; Wertheim procedure
26	64	Extended radical hysterectomy
27	65	Hysterectomy, NOS, WITH or WITHOUT removal of tube(s) and ovary(ies)
28	66	WITHOUT removal of tube(s) and ovary(ies)
29	67	WITH removal of tube(s) and ovary(ies)
30	75	Pelvic exenteration
31	76	Anterior exenteration
32	77	Posterior exenteration
33	78	Total exenteration
34	79	Extended exenteration
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Ovary
C569
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	17	Local tumor destruction, NOS
3	25	Total removal of tumor or (single) ovary, NOS
4	26	Resection of ovary (wedge, subtotal, or partial) ONLY, NOS; unknown if hysterectomy done
5	27	WITHOUT hysterectomy
6	28	WITH hysterectomy
7	35	Unilateral (salpingo-) oophorectomy; unknown if hysterectomy done
8	36	WITHOUT hysterectomy
9	37	WITH hysterectomy
10	50	Bilateral (salpingo-) oophorectomy; unknown if hysterectomy done
11	51	WITHOUT hysterectomy
12	52	WITH hysterectomy
13	55	Unilateral or bilateral (salpingo-) oophorectomy WITH OMENTECTOMY, NOS; partial or total; unknown if hysterectomy done
14	56	WITHOUT hysterectomy
15	57	WITH hysterectomy
16	60	Debulking; cytoreductive surgery, NOS
17	61	WITH colon (including appendix) and/or small intestine resection (not incidental)
18	62	WITH partial resection of urinary tract (not incidental)
19	63	Combination of 61 and 62
20	70	Pelvic exenteration, NOS
21	71	Anterior exenteration
22	72	Posterior exenteration
23	73	Total exenteration
24	74	Extended exenteration
2.5	80	(Salpingo-) oophorectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Prostate
C619
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, [or excision] NOS
3	14	Cryoprostatectomy
4	15	Laser ablation
5	16	Hyperthermia
6	17	Other method of local tumor destruction
7	18	Local tumor destruction or excision, NOS
8	19	Transurethral resection (TURP), NOS
9	20	Local tumor excision, NOS
10	21	Transurethral resection (TURP), NOS
11	22	TURP—cancer is incidental finding during surgery for benign disease
12	23	TURP—patient has suspected/known cancer
13	24	Cryosurgery
14	25	Laser
15	26	Hyperthermia
16	30	Subtotal, segmental, or simple prostatectomy, which may leave all or part of the capsule intact
17	50	Radical prostatectomy, NOS; total prostatectomy, NOS
18	70	Prostatectomy WITH resection in continuity with other organs; pelvic exenteration
15.5	80	Prostatectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Testis
C620–C629
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	12	Local tumor destruction, NOS
3	20	Local or partial excision of testicle
4	30	Excision of testicle, WITHOUT cord
5	40	Excision of testicle WITH cord or cord not mentioned (radical orchiectomy)
3.5	80	Orchiectomy, NOS (unspecified whether partial or total testicle removed)
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate only

Site-Specific Surgery Codes
Kidney, Renal Pelvis, and Ureter
Kidney C649, Renal Pelvis C659, Ureter C669
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	15	Thermal ablation
8	20	Local tumor excision, NOS
9	21	Photodynamic therapy (PDT)
10	22	Electrocautery

Hierarchy	Surgery Code	Description
11	23	Cryosurgery
12	24	Laser ablation
13	25	Laser excision
14	26	Polypectomy
15	27	Excisional biopsy
16	30	Partial or subtotal nephrectomy (kidney or renal pelvis) or partial ureterectomy (ureter)
17	40	Complete/total/simple nephrectomy—for kidney parenchyma
18	50	Radical nephrectomy
19	70	Any nephrectomy (simple, subtotal, complete, partial, total, radical) in continuity with the resection of other organ(s) (colon, bladder)
15.5	80	Nephrectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Bladder
C670–C679
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	15	Intravesical therapy
8	16	Bacillus Calmette-Guerin (BCG) or other immunotherapy
9	20	Local tumor excision, NOS
10	21	Photodynamic therapy (PDT)

Hierarchy	Surgery Code	Description
11	22	Electrocautery
12	23	Cryosurgery
13	24	Laser ablation
14	25	Laser excision
15	26	Polypectomy
16	27	Excisional biopsy
17	30	Partial cystectomy
18	50	Simple/total/complete cystectomy
19	60	Radical cystectomy (male only)
20	61	Radical cystectomy PLUS ileal conduit
21	62	Radical cystectomy PLUS continent reservoir or pouch, NOS
22	63	Radical cystectomy PLUS abdominal pouch (cutaneous)
23	64	Radical cystectomy PLUS insitu pouch (orthotopic)
24	70	Pelvic exenteration, NOS
25	71	Radical cystectomy (female only); anterior exenteration
26	72	Posterior exenteration
27	73	Total exenteration
28	74	Extended exenteration
16.5	80	Cystectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
BRAIN [and other parts of central nervous system]
Meninges C700-C709, Brain C710–C719,
Spinal Cord, Cranial Nerves and Other Parts of Central Nervous System C720–C729
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Tumor destruction, NOS
3	20	Local excision (biopsy) of lesion or mass; excisional biopsy
4	21	Subtotal resection of tumor, lesion or mass in brain
5	22	Resection of tumor of spinal cord or nerve
6	30	Radical, total, gross resection of tumor, lesion or mass in brain
7	40	Partial resection of lobe of brain, when the surgery can not be coded as 20-30
8	55	Gross total resection of lobe of brain (lobectomy)
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Thyroid Gland
C739
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	13	Local tumor destruction, NOS
3	20	Lobectomy and/or isthmectomy
4	21	Lobectomy ONLY
5	22	Isthmectomy ONLY
6	23	Lobectomy WITH isthmus
7	25	Removal of less than a lobe, NOS

Hierarchy	Surgery Code	Description
8	26	Local surgical excision
9	27	Removal of a partial lobe ONLY
10	30	Removal of a lobe and partial removal of the contralateral lobe
11	40	Subtotal or near total thyroidectomy
12	50	Total thyroidectomy
10.5	80	Thyroidectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Hematopoietic/Reticuloendothelial/
Immunoproliferative/Myeloproliferative Disease
C420, C421, C423, C424 (with any histology)
or
M-9750, 9760–9764, 9800–9820, 9826, 9831–9920, 9931–9964,
9980–9989 (with any site)

Hierarchy	Surgery Code	Description
1	98	All hematopoietic/reticuloendothelial/immunoproliferative/myeloproliferative disease sites and/or histologies,
0.5	99	Death certificate only

Site-Specific Surgery Codes
Hematopoietic/Reticuloendothelial/
Immunoproliferative/Myeloproliferative Disease
C422
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	19	Local tumor destruction or excision, NOS
3	21	Partial splenectomy
4	22	Total splenectomy
2.5	80	Splenectomy, NOS
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
Unknown And Ill-Defined Primary Sites
C760–C768, C809
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	98	All unknown and ill-defined disease sites, WITH or WITHOUT surgical treatment
0.5	99	Death certificate only

Site-Specific Surgery Codes
Lymph Nodes
C770–C779
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	15	Local tumor destruction, NOS
3	19	Local tumor destruction or excision, NOS
4	25	Local tumor excision, NOS
5	30	Lymph node dissection, NOS
6	31	One chain
7	32	Two or more chains
8	40	Lymph node dissection, NOS PLUS splenectomy
9	41	One chain
10	42	Two or more chains
11	50	Lymph node dissection, NOS and partial/total removal of adjacent organ(s)
12	51	One chain
13	52	Two or more chains
14	60	Lymph node dissection, NOS and partial/total removal of adjacent organ(s) PLUS splenectomy (Includes staging laparotomy for lymphoma)
15	61	One chain
16	62	Two or more chains
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY

Site-Specific Surgery Codes
All Other Sites
C142–C148, C170–C179, C239, C240–C249, C260–C269, C300–C301, C310–C319, C339, C379, C380–C388, C390–C399, C480–C488, C510–C519, C529, C570–C579, C589, C600–C609, C630–C639, C680–C689, C690–C699, C740–C749, C750–C759
(Except for M-9750, 9760-9764, 9800-9820, 9826, 9831-9920, 9931-9964, 9980-9989)

Hierarchy	Surgery Code	Description
1	0	None; no surgery of primary site; autopsy ONLY
2	10	Local tumor destruction, NOS
3	11	Photodynamic therapy (PDT)
4	12	Electrocautery; fulguration (includes use of hot forceps for tumor destruction)
5	13	Cryosurgery
6	14	Laser
7	20	Local tumor excision, NOS
8	21	Photodynamic therapy (PDT)
9	22	Electrocautery
10	23	Cryosurgery
11	24	Laser ablation
12	25	Laser excision
13	26	Polypectomy
14	27	Excisional biopsy
15	30	Simple/partial surgical removal of primary site
16	40	Total surgical removal of primary site; enucleation
17	41	Total enucleation (for eye surgery only)
18	50	Surgery stated to be “debulking”
19	60	Radical surgery
1.5	90	Surgery, NOS
0.5	99	Unknown if surgery performed; death certificate ONLY