

NAACCR 2015 Implementation Guidelines
and Recommendations:
The Hematopoietic Conversion
Documentation

Publication date: 1/9/15

This document contains detailed information regarding the Hematopoietic conversion program which is part of the 2015 NAACCR implementation. NCI SEER would like to take this opportunity to pass along thanks to the groups and individuals who provided assistance in developing this document.

- 2015 NAACCR Implementation Guidelines Group
- NAACCR Edits Impact Workgroup
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Special thanks to the following individuals

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NCI SEER, January 2015

Submit questions regarding this document to “Ask a SEER Registrar” (<http://seer.cancer.gov/registrars/contact.html>) and choose subject: Hematopoietic Rules (database & manual).

HEMATOPOIETIC & LYMPHOID NEOPLASMS (HEME) CONVERSIONS FOR 2015

In January 2014, NCI SEER released a revised Hematopoietic Database and Manual (HEME) that combined all the changes from 2010 consolidated into one database and manual. Prior to this, registrars had to use the 2010 HEME manual and database for cases diagnosed 2010-2011 and the 2012 HEME manual and database for cases diagnosed 2012 and forward. An in depth review was made of all the changes since 2010 when the new rules/databases were first released. It was decided that combining all the changes and making one manual and database would not have a significant impact on incidence, histology, or multiple primaries. This information was documented in the “comparison documents” which were released in mid-2014. The comparison documents are on the SEER website:

<http://www.seer.cancer.gov/tools/heme/comparison.html>

WHY CHANGES NOW

After the consolidation of the 2010 and 2012 HEME Databases and Manuals into one, NCI SEER continued to explore other areas where improvements could be made. The next area was recommending that the 24 obsolete (OBS) histology codes be changed to their current histology code for 2010+ (See Appendix E in the HEME manual for a complete listing). Previously, the HEME database had instructions which stated the OBS histologies could still be used for cases where there was limited information or DCO cases. The reasons for deciding to no longer allow for them for 2010 and forward are

- OBS codes were not being used consistently because the instructions in the database about their use were not always followed or understood. These instructions were removed for the January 2014 update.
- Some states developed edits that would not allow the use of the OBS codes 1/1/2010 and after
- There were concerns about analyzing data over time with both OBS codes and current codes in use for the same diagnosis year

With these issues, NCI SEER recommended that all cases with an OBS code diagnosed 2010 and forward be changed to the current code. This would result in the HEME data being consistent across all registries. Additional review determined that two other data items must be reviewed

and changed: grade and primary site. Once the recommendation was written up and reviewed by NCI SEER, it was shared with the NAACCR Edits committee. The Edits committee decided the best way to handle this was to run a conversion program when the 2015 software update was done. This would ensure that data would be converted consistently across all registries.

Both SEER and NPCR used the conversion criteria to get an idea of how many cases would be affected for years 2010-2012 (years 2013 and 2014 not available at the time, but will be part of the conversion). Based on the SEER and NPCR evaluation, the numbers are fairly low and will not be problematic for any hospital or central registry. SEER and NPCR numbers are included with most of the conversion tables.

Do NOT apply these changes or conversions to cases prior to 2010. Some histology codes changed definition between 2009 and 2010. Some of the conversions are to histology codes that were not in effect until 2010. Application of these conversions to earlier cases may cause problems and trigger edits.

GOING FORWARD

In addition to the histology code conversions, edits were also reviewed and revised for all HEME related data items. During this review process, it was decided to develop a conversion document for the HEME data items that could be converted and apply the conversion to all registries (hospital and central) consistently. The purpose of this conversion document is to make data consistent for several data items across all registries. After the conversions were developed, edits were revised to ensure that cases going forward would be coded correctly.

Conversions will be applied to three data items: Histology, Primary Site, and Grade. The conversions are based on the rules in the database and manual. Changes to primary site and histology may impact other fields and these fields are also converted when possible. Changes to primary site and histology may also impact local site and histology recodes used for analyses. These changes have not yet been documented.

These conversions only apply to malignant (/3) histologies 9590-9992 for case diagnosed 1/1/2010 and forward.

The computerized conversion program will make one pass of the data and perform all of the conversions. This documentation divides it up into specific sections and parts to explain the reasons for the conversions to the cancer registrar community.

In the conversion documentation, the histologies are converted first, including the reassignment of CS schema when applicable. In part II of the documentation, the newly converted histologies are used for the primary site and grade conversions.

CS algorithms and other conversions, recodes, or algorithms dependent on primary site, histology, or grade must be re-run after these changes are made.

HEME CONVERSIONS:

This documentation of the Heme conversions is shown step-wise to give the registrar specific reasons as to why the conversion is necessary. Step 1 documents the histology conversions. Steps 2 and 3 document the grade and primary site conversions, respectively. The documentation of the grade and primary site conversions assumes that the histology conversions have already been completed. The documentation for the computer conversion program shows all of the changes for each histology, site, grade and surgery codes on a single row and is intended to document how the conversion program's logic is set up. While the two documents are formatted differently, they contain equivalent conversion specifications and are directed towards different audiences.

A companion spreadsheet has been produced to show, for each histology code affected, all conversions needed:

<http://seer.cancer.gov/tools/heme/heme-conversion-naaccr-v15.xlsx>. The spreadsheet should be useful to those programming a computer conversion.

STEP 1: HISTOLOGY CONVERSIONS

The first step of the conversion is for reassignment of obsolete [OBS] histologies to their current histology. This process will require four parts for ease of documentation as some of the conversions will result in a CS schema change. All 4 parts are done in one pass of the data.

These conversions are based on information found in the Hematopoietic & Lymphoid Neoplasm Database:

<http://www.seer.cancer.gov/seertools/hemelymph/>. Example:



The screenshot shows the SEER website interface. At the top left is the SEER logo with the tagline "Surveillance, Epidemiology, and End Results Program" and "Turning Cancer Data Into Discovery". To the right is a search bar labeled "Search SEER:" with a text input field containing "Enter keyword(s)" and a green "Search" button. Below the header is a navigation menu with four main categories: "Cancer Statistics" (with sub-links for "Statistical Summaries", "Interactive Tools", and "Publications"), "For Researchers" (with sub-link for "Datasets and Software"), "For Cancer Registrars" (with sub-link for "Coding Rules, Training and Support"), and "About SEER" (with sub-link for "Our Registries and Research"). Below the navigation menu is a breadcrumb trail: "Home > Registrars > Hematopoietic and Lymphoid Neoplasm Database > Disease Information". The main content area displays the title "Hodgkin lymphoma, lymphocyte depletion, diffuse fibrosis" with links to "Hematopoietic Coding Manual (PDF)", "ICD-O-3 Code Lists", and "User Guide (PDF)". A prominent blue box contains the message: "This ICD-O code is obsolete. For current cases please see code 9653/3 Lymphocyte-depleted classical Hodgkin lymphoma". Below this message, the "Name" field is populated with the text "Hodgkin lymphoma, lymphocyte depletion, diffuse fibrosis".

For each of the histologies listed in the tables below (except for those noted by *), a message similar to the message shown above will appear when you click on the histology in the HEME database. The conversions match these messages.

Part 1: Histology conversions not dependent on primary site

Note: These obsolete histologies are still defined in CSv0205; however, according to the Hematopoietic manual and database, these are no longer applicable for cases diagnosed 2010 and forward. Therefore, the documentation for CSv0205 will be slightly out of sync with these changes and an edit should prevent one from using the obsolete histologies for 2010+.

If Year of Diagnosis is 2010+:

OBS Histology	Current Histology	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9654	9653	3	3
9661	9650	0	1
9662	9650	0	61
9664	9663	19	232
9665	9663	60	212
9667	9663	63	78
9675	9690	19	342
9684	9680	70	6
9750	9751	1	0
9752*	9751	0	0
9753*	9751	0	0
9754	9751	15	70
9760**	9762	1	18
9764	9762	1	1
9805***	9809	37	121
9960	9975	0	1546
9984	9983	0	77
9987	9920	0	707

**Listed as /1 In ICD-O-3. Per the matrix concept in ICD-O-3, these histologies could be assigned behavior code /3 if a case had a malignant diagnosis that fit either code. These codes no longer exist and will be converted to 9751.*

*** Per the abstractor notes for 9760, this histology converts to 9761 or 9762. For the one time histology conversion ONLY, 9760 will be converted to 9762. To find this information, go to the Hematopoietic Database: <http://www.seer.cancer.gov/seertools/hemelymph/51f6cf59e3e27c3994bd545f/?q=9760>. At the “Help me code for diagnosis year” choose 2009 and then scroll down to the Abstractor notes.*

**** Per the abstractor notes for 9805, this histology converts to 9806, 9807, 9808, or 9809. For the one time histology conversion ONLY, 9805 will be converted to 9809. To find this information, go to the Hematopoietic Database: <http://www.seer.cancer.gov/seertools/hemelymph/51f6cf59e3e27c3994bd543e/?q=9805>. At the “Help me code for diagnosis year” choose 2009 and then scroll down to the Abstractor notes.*

Part 2: Histology conversion dependent on primary site with no change in schema

If Year of Diagnosis is 2010+:

OBS histology	Primary site(s)	Current histology	New primary site	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9670	NOT in (C420, C421, C423, C424)	9823	-	1514	5531
9728	NOT in (C420, C421, C423, C424)	9811	-	33	139
9729	NOT in (C420, C421, C423, C424)	9837	-	101	415
9835	Not in (C421, C441, C690, C695-C696)	9811	C421	823	3138
9835	C421	9811	-	See above	See above
9836	Not in (C421, C441, C690, C695-C696)	9811	C421	854	3362
9836	C421	9811	-	See above	See above

Part 3: Obsolete Histology and CS conversions dependent on primary site with change in schema

Several different schema changes will be going on in this conversion. These conversions are being done to align current Heme data (2010+) with the Primary Site Coding Instructions and Rules which are in the Hematopoietic Manual and Database. There are two parts to this conversion.

Part 3 will handle the conversion for the obsolete histologies.

A. Schema conversions to HemeRetic

Lymphoma schema: <http://web2.facs.org/cstage0205/lymphoma/Lymphomaschema.html>

LymphomaOcularAdnexa schema: <http://web2.facs.org/cstage0205/lymphomaocularadnexa/LymphomaOcularAdnexaschema.html>

HemeRetic schema: <http://web2.facs.org/cstage0205/hemeretic/HemeReticschema.html>

If Year of Diagnosis is 2010+:

OBS histology	Current primary site	Current (new) histology	New Primary Site	New CS Extension	New CS Nodes	New CS Mets	New CS SSF1	New CS SSF2	New CS SSF3	New CS SSF 4-13	# Cases
9670	C420, C423, C424	9823	C421	800	-	-	999	988	988	988	See above
9670	C421	9823	-	800	-	-	999	988	988	988	See above
9728	C420, C423, C424	9811	C421	800	-	-	999	988	988	988	See above
9728	C421	9811	-	800	-	-	999	988	988	988	See above
9729	C420, C423, C424	9837	C421	800	-	-	999	988	988	988	See above
9729	C421	9837	-	800	-	-	999	988	988	988	See above
9835	C441, C690, C695-C696	9811	C421	800	988	98	999	988	988	988	See above
9836	C441, C690, C695-C696	9811	C421	800	988	98	999	988	988	988	See above

B. Schema Conversions to MyelomaPlasmaCellDisorder

LymphomaOcularAdnexa schema: <http://web2.facs.org/cstage0205/lymphomaocularadnexa/LymphomaOcularAdnexaschema.html>

HemeRetic schema: <http://web2.facs.org/cstage0205/hemeretic/HemeReticschema.html>

MyelomasPlasmaCellDisorder schema: <http://web2.facs.org/cstage0205/myelomaplasmacelldisorder/MyelomaPlasmaCellDisorderschema.html>

If Year of Diagnosis is 2010+:

OBS histology	Current primary site	Current (new) histology	New Primary Site	New CS Extension	New CS Nodes	New CS Mets	New CS SSF1	New CS SSF2	New CS SSF3	New CS SSF 4-13	# SEER Cases 2010-2012	# NPCR Cases 2010-2011
9733	All sites except C421	9732	C421	810	987	98	988	999	999	988	70	386
9733	C421	9732	-	810	987	-	988	999	999	-	See above	See above

Part 4: Histology and CS conversions dependent on primary site with change in schema

This part handles the conversion for current histologies where a schema change will need to be done based on the change in primary site.

While the CS schema LymphomaOcularAdnexa (LOA) shows that sites C441, C690, C695-C696 can be used with the following histology codes in this table and 9733 above, these conversions will make them no longer LOA, so it will no longer agree with the schema index page for LOA. It will be an impossible combination for LOA.

A. LymphomaOcularAdnexa to HemeRetic

LymphomaOcularAdnexa schema: <http://web2.facs.org/cstage0205/lymphomaocularadnexa/LymphomaOcularAdnexaschema.html>

HemeRetic schema: <http://web2.facs.org/cstage0205/hemeretic/HemeReticschema.html>

The following histologies and 9733 above currently are allowed in the LymphomaOcularAdnexa schema in CS when primary site is C441, C690, and C695-C696. The primary sites for these histologies are being converted to bone marrow (C421) per the Hematopoietic Primary Site Coding Instructions and Rules. Although CSv0205 will continue to allow sites of C441, C690, C695-C696 for these histologies, the edits will no longer allow these combinations and they will now be considered under HemeRetic based on the change of the site codes to C421.

If Year of Diagnosis is 2010+:

Histology	Current primary site	New Primary Site	New CS Extension	New CS Nodes	New CS Mets	New CS SSF 1	New CS SSF2-SSF13	# SEER Cases 2010-2012	# NPCR Cases 2010-2011
9820	C441,C690,C695-C696	C421	800	988	98	999	988	Not available	Not available
9826	C441,C690,C695-C696	C421	800	988	98	999	988	Not available	Not available
9831	C441,C690,C695-C696	C421	800	988	98	999	988	Not available	Not available
9832	C441,C690,C695-C696	C421	800	988	98	999	988	Not available	Not available
9833	C441,C690,C695-C696	C421	800	988	98	999	988	Not available	Not available
9834	C441,C690,C695-C696	C421	800	988	98	999	988	Not available	Not available

B. Lymphoma to HemeRetic

Lymphoma schema: <http://web2.facs.org/cstage0205/lymphoma/Lymphomaschema.html>

HemeRetic schema: <http://web2.facs.org/cstage0205/hemeretic/HemeReticschema.html>

Per Primary Site Coding Instructions and Rules in the Hematopoietic Manual (update for January 2015), primary site C423 (Reticuloendothelial system) will no longer be allowed as a primary site for Hematopoietic histologies. C423 will be converted to C421 (bone marrow). For the histologies listed in the table, this will result in a schema change from Lymphoma to HemeRetic. Although CSv0205 will continue to allow a primary site of C423 with these histologies, the edits will no longer allow these combinations.

If Year of Diagnosis is 2010+:

Histology	Current primary site	New Primary Site	New CS Extension	New CS SSF 1	New CS SSF2-SSF5	# SEER Cases 2010-2012	# NPCR Cases 2010-2011
9811	C423	C421	800	999	988	Not available	Not available
9812	C423	C421	800	999	988	Not available	Not available
9813	C423	C421	800	999	988	Not available	Not available
9814	C423	C421	800	999	988	Not available	Not available
9815	C423	C421	800	999	988	Not available	Not available
9816	C423	C421	800	999	988	Not available	Not available
9817	C423	C421	800	999	988	Not available	Not available

Histology	Current primary site	New Primary Site	New CS Extension	New CS SSF 1	New CS SSF2-SSF5	# SEER Cases 2010-2012	# NPCR Cases 2010-2011
9818	C423	C421	800	999	988	Not available	Not available
9823	C423	C421	800	999	988	Not available	Not available
9827	C423	C421	800	999	988	Not available	Not available
9837	C423	C421	800	999	988	Not available	Not available

STEP 2: GRADE CONVERSIONS

The second step of the conversion is the reassignment of grade. This applies to histologies 9590-9992 with behavior code /3.

1. For those histologies that have a defined grade, cases that don't have that grade will be converted to the defined grade.
2. For those histologies that have more than one defined grade and the current grade is not one of them, a default grade will be assigned.
3. For the remaining histologies that do not have a defined grade, if the grade is equal to 1-4 (not hematopoietic grades), the grade will be converted to 9.
4. Information on grade for hematopoietic diseases can be found in the Hematopoietic and Lymphoid Neoplasm Database & Manual: <http://seer.cancer.gov/seertools/hemelymph/>.
5. Columns 1 & 2 are the criteria for the conversions. For example, if there are any cases of 9590/3 with grade 1-4, those cases will be converted to grade 9. Another example, if there are any cases of 9705/3 with a grade other than 5, those cases will be converted to grade 5.

If Year of Diagnosis is 2010+:

Histologies	If Grade is	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2011
9590, 9650, 9651, 9652, 9653, 9655, 9663, 9727, 9735, 9800, 9820, 9832, 9840, 9860, 9861, 9863, 9865-9867, 9869, 9870-9874, 9891, 9895-9898, 9910, 9911, 9920, 9930, 9931, 9965-9967, 9971	1-4	9	75	203
9591, 9596, 9597, 9659*, 9671, 9673, 9678, 9679, 9680, 9687, 9688, 9689, 9690, 9691, 9695, 9698, 9699, 9712, 9731, 9732, 9734, 9737, 9738, 9761, 9762, 9811-9818, 9823, 9826, 9833, 9940	1-5, 7-9	6	984	2162
9700-9702, 9705, 9708, 9709, 9716-9718, 9724-9726, 9827, 9834, 9837	1-4, 6-9	5	9	14
9714	1-4, 7-9	5	166	505
9719, 9948	1-7, 9	8	0	0

Histologies	If Grade is	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2011
9740-9742, 9751, 9755-9759, 9801, 9806-9809, 9875, 9876, 9945, 9946, 9950, 9961-9964, 9975, 9980, 9982, 9983, 9985, 9986, 9989, 9991, 9992	1-8	9	30	10
9831	1-4, 6-7	9	10	0

**For the 2015 update, a default grade of 6 (B-cell) has been assigned for 9659 in the database and manual. This change applies to cases diagnosed 2010 and forward. The conversion program will automatically convert all cases from 2010 forward.*

STEP 3: PRIMARY SITE CONVERSION

The third step of the conversion is the reassignment of primary site when needed. This applies to histologies 9590-9992 with behavior code /3. Three separate tables are listed below to handle the histologies.

TABLE 1: Conversions for Plasma Cell Myeloma (9732), Malignant mastocytosis (9741), Waldenstrom Macroglobulinemia (9761), Leukemias, Myeloproliferative diseases and Myeloproliferative neoplasms (9800-9920, 9931-9967, 9975-9992)

(Reference: Hematopoietic Database, <http://www.seer.cancer.gov/seertools/hemelymph/>).

1. Waldenstrom Macroglobulinemia (9761) must **always** have primary site C420. Remaining histologies in Table 1 must **always** have primary site C421.
2. The primary site for leukemia is C421 (bone marrow) even though it can be diagnosed by peripheral blood smear.
3. Edits have been revised to enforce the primary site for the histologies listed in **Table 1** and will be effective for cases diagnosed 1/1/2010.
4. Please note: The site and histology combinations listed in the table may not match the site/type list. The instructions and rules for Hematopoietic histologies are restricted to specific years. The site/type list is not restricted to specific years. Edits are developed to enforce the specific rules in the Heme manual and have been adapted to handle the site/type situation.
5. If surgery of primary site is not 98, it needs to be converted to 98 for these histologies. Scope of regional lymph node surgery should also be 9. **These changes will need to be done manually.**

For cases diagnosed 1/1/2010+

ICD-O code	Description	If Primary Site is NOT	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9732/3	Plasma cell myeloma <i>Note: Also includes converted cases for histology 9733</i>	C421	C421	11	14
9741/3	Malignant mastocytosis	C421	C421	0	1
9742/3	Mast cell leukemia	C421	C421	0	0
9761/3	Waldenstrom macroglobulinemia	C420	C420	5	29
9800/3	Leukemia, NOS	C421	C421	0	2

ICD-O code	Description	If Primary Site is NOT	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9801/3	Acute undifferentiated leukemia	C421	C421	0	3
9806/3	Mixed phenotype acute leukemia with t(9;22)(q34;q11.2);BCR-ABL1	C421	C421	0	0
9807/3	Mixed phenotype acute leukemia with t(v;11q23); MLL rearranged	C421	C421	1	0
9808/3	Mixed phenotype acute leukemia, B/myeloid, NOS	C421	C421	0	0
9809/3	Mixed phenotype acute leukemia, T/myeloid, NOS <i>Note: Also includes converted cases for histology 9805</i>	C421	C421	0	1
9820/3	Lymphoid, leukemia, NOS	C421	C421	0	0
9826/3	Burkitt cell leukemia	C421	C421	1	0
9831/3	T-cell large granular lymphocytic leukemia	C421	C421	0	1
9832/3	Prolymphocytic leukemia, NOS	C421	C421	0	1
9833/3	B-cell prolymphocytic leukemia	C421	C421	0	0
9834/3	T-cell prolymphocytic leukemia	C421	C421	0	0
9840/3	Acute erythroid leukemia	C421	C421	1	0
9860/3	Myeloid leukemia, NOS	C421	C421	1	8
9861/3	Acute myeloid leukemia, NOS	C421	C421	4	12
9863/3	Chronic myeloid leukemia, NOS	C421	C421	2	5
9865/3	Acute myeloid leukemia with t(6;9)(p23;q34);DEK-NUP214	C421	C421	0	0
9866/3	Acute promyelocytic leukemia (AML with t(15;17)(q22;q12)) PML/RARA	C421	C421	0	1
9867/3	Acute myelomonocytic leukemia	C421	C421	0	0
9869/3	Acute myeloid leukemia with inv(3)(q21;q26.2) or t(3;3)(q21;q26.2); RPN1-EVI1	C421	C421	0	0
9870/3	Acute basophilic leukemia	C421	C421	0	0
9871/3	Acute myeloid leukemia with inv(16)(p13.1q22) or t(16;16) (p13.1;q22), CBFβ/MYH11	C421	C421	0	0
9872/3	Acute myeloid leukemia with minimal differentiation	C421	C421	0	0
9873/3	Acute myeloid leukemia without maturation	C421	C421	0	0
9874/3	Acute myeloid leukemia with maturation	C421	C421	0	0

ICD-O code	Description	If Primary Site is NOT	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9875/3	Chronic myelogenous leukemia, BCR/ABL1 positive	C421	C421	1	3
9876/3	Atypical chronic myeloid leukemia, BCR-ABL1 negative	C421	C421	0	0
9891/3	Acute monocytic leukemia	C421	C421	1	1
9895/3	Acute myeloid leukemia with myelodysplasia-related changes	C421	C421	0	1
9896/3	Acute myeloid leukemia, t(8;21)(q22;q22) RUNX1-RUNX1T1	C421	C421	0	0
9897/3	Acute myeloid leukemia with t(9;11)(p22;q23);MLL3-ML	C421	C421	0	0
9898/3	Myeloid leukemia associated with Down Syndrome	C421	C421	0	0
9910/3	Acute megakaryoblastic leukemia	C421	C421	0	0
9911/3	Acute myeloid leukemia (megakaryoblastic) with t(1;22)(p13;q13);RBM15-MKL1	C421	C421	0	0
9920/3	Therapy related myeloid neoplasm <i>Note: Also includes converted cases for histology 9987</i>	C421	C421	0	0
9931/3	Acute panmyelosis with myelofibrosis	C421	C421	0	0
9940/3	Hairy cell leukemia	C421	C421	11	2
9945/3	Chronic myelomonocytic leukemia	C421	C421	0	2
9946/3	Juvenile myelomonocytic leukemia	C421	C421	0	0
9948/3	Aggressive NK-cell leukemia	C421	C421	0	0
9950/3	Polycythemia vera	C421	C421	0	12
9961/3	Myelosclerosis with myeloid metaplasia	C421	C421	0	16
9962/3	Essential thrombocythemia	C421	C421	0	13
9963/3	Chronic neutrophilic leukemia	C421	C421	0	0
9964/3	Chronic eosinophilic leukemia, NOS	C421	C421	0	1
9965/3	Myeloid and lymphoid neoplasms with PDGFRA rearrangement	C421	C421	0	1
9966/3	Myeloid neoplasms with PDGFRB rearrangement	C421	C421	0	0
9967/3	Myeloid and lymphoid neoplasms with FGFR1 abnormalities	C421	C421	0	0
9975/3	Myelodysplastic/myeloproliferative neoplasm, unclassifiable <i>Note: Also includes converted cases for histology 9960</i>	C421	C421	0	1

ICD-O code	Description	If Primary Site is NOT	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9980/3	Refractory anemia	C421	C421	0	5
9982/3	Refractory anemia with ring sideroblasts	C421	C421	0	2
9983/3	Refractory anemia with excess blasts <i>Note: Also includes converted cases for histology 9984</i>	C421	C421	0	18
9985/3	Refractory cytopenia with multilineage dysplasia	C421	C421	0	14
9986/3	Myelodysplastic syndrome associated with isolated del (5q)	C421	C421	0	0
9989/3	Myelodysplastic syndrome, unclassifiable	C421	C421	0	24
9991/3	Refractory neutropenia	C421	C421	0	0
9992/3	Refractory thrombocytopenia	C421	C421	0	0

TABLE 2: Conversions for Lymphoma/Leukemia histologies (9811-9818, 9823, 9827, 9837) and Heavy chain disease (9762)

(Reference: Hematopoietic Database, <http://www.seer.cancer.gov/seertools/hemelymph/>)

1. For purposes of the **conversion only**, the primary site will be converted to C421 for any of these histologies coded to primary site C420 (blood), C423 (Reticuloendothelial system) or C424 (Hematopoietic, NOS).
2. According to SEER and NPCR data, most cases affected are coded to C420 (blood) indicating that they were probably diagnosed by peripheral blood smear. As stated for Table 1, primary site is C421 (bone marrow) even when diagnosed by peripheral blood smear.
3. Edits have been revised to enforce that primary sites C420, C423, and C424 are not allowed for the histologies listed in **Table 2** and will be effective for cases diagnosed 1/1/2010+.

For cases diagnosed 1/1/2010+

ICD-O code	Description	If Primary Site is	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9762/3	Heavy chain disease <i>Note: Also includes converted cases for histologies 9760 & 9764</i>	C420, C423, C424	C421	4	6

ICD-O code	Description	If Primary Site is	Convert to	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9811/3	B lymphoblastic leukemia/lymphoma, NOS <i>Note: Also includes converted cases for histologies 9728, 9835, 9836</i>	C420, C424	C421	4	5
9812/3	B Lymphoblastic leukemia/lymphoma with t(9;22)(q34;q11.2); BCR-ABL1	C420, C424	C421	0	0
9813/3	B Lymphoblastic leukemia/lymphoma with t(v;11q23); MLL rearranged	C420, C424	C421	0	0
9814/3	B Lymphoblastic leukemia/lymphoma with t(12;21)(p13;q22); TEL-AML1 (ETV6-RUNX1	C420, C424	C421	0	0
9815/3	B Lymphoblastic leukemia/lymphoma with hyperdiploidy	C420, C424	C421	0	0
9816/3	B Lymphoblastic leukemia/lymphoma with hypodiploidy (Hypodiploid ALL)	C420, C424	C421	0	0
9817/3	B Lymphoblastic leukemia/lymphoma with t(5;14)(q31;q32); IL3-IGH	C420, C424	C421	0	0
9818/3	B Lymphoblastic leukemia/lymphoma with t(1;19) (q23;p13.3);E2A-PBX1 (TCF3-PBX1	C420, C424	C421	0	0
9823/3	Chronic lymphocytic leukemia/small lymphocytic leukemia (CLL/SLL) <i>Note 1: Also includes converted cases for histology 9670</i> <i>Note 2: CLL/SLL is the most common of all the leukemias that is diagnosed by peripheral blood smear, which is why these numbers are so high.</i>	C420, C424	C421	179	581
9827/3	Adult T-cell leukemia/ lymphoma (HTLV-1 positive)	C420, C424	C421	1	4
9837/3	Adult T-cell leukemia/lymphoma <i>Note: Also includes converted cases for histology 9729</i>	C420, C424	C421	0	1

TABLE 3: Manual review for histologies

Reference: Hematopoietic Database, <http://www.seer.cancer.gov/seertools/hemelymph/>

Note: Review may also include review of other CS fields if the change to site or histology changes the CS schema. After making changes, rerun the CS algorithms.

Note: The national standard setters are requiring this manual review. SEER and NPCR have provided the number of cases for 2010-2012 in the table below. A specific hospital or state/central registry may not have any cases. Due to the low numbers, this review will ordinarily not be time consuming. If the review/changes are not done, cases will fail the revised edits that will be in the NAACCRv15 Metafile.

1. The histologies in Table 3 (primarily lymphomas) must not have a primary site of C420 (Blood), C423 (Reticuloendothelial system) or C424 (Hematopoietic, NOS). These cases cannot be automatically converted and manual review is needed to determine the best primary site and histology. If no further information can be found, a “default” primary site is provided. This is to be used as a last resort. Additional information about each of the diseases can be found in the HEME database: <http://seer.cancer.gov/seertools/hemelymph/>
2. Several of the histologies in table 3 have specified primary site/histology combinations that are not correct based on the Hematopoietic database. Comments are provided to help determine the best primary site/histology combination.
3. For lymphomas that have primary sites that are listed as impossible based on the tables below, verify histology first. If the only information available is a peripheral blood smear, assign primary site C421 (bone marrow).
 - a. Note: For the 2015 Hematopoietic Manual, the following note will be added to Rule PH26: *If there is a positive peripheral blood smear and no other information is available, assign primary site C421. (To be posted early January 2015).*
4. **Upon review, changes to the primary site or histology may cause the CS schema to change and other fields based on site and histology may also need to be updated such as surgery codes and scope of regional lymph node surgery. It is very important to also review other affected data fields when changing primary site or histology.**
5. Edits are being revised for the histologies in Table 3. The edits will go into effect for diagnosis date 1/1/2010 and forward.

For cases diagnosed 1/1/2010+:

ICD-O code	Description	Primary Site must not be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9590	Malignant lymphoma, NOS	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	2	3

ICD-O code	Description	Primary Site must not be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9591	Malignant lymphoma, non-Hodgkin, NOS	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	7	33
9596	Composite Hodgkin and non-Hodgkin, NOS	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9597	Primary cutaneous follicle center lymphoma	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	1	0
9650	Hodgkin lymphoma, NOS <i>Note: Also includes converted cases for histologies 9661 & 9662.</i>	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	1	3
9651	Hodgkin lymphoma, lymphocytic	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9652	Hodgkin lymphoma, mixed cellularity, NOS	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	1	1
9653	Hodgkin lymphoma, lymphocytic depletion, NOS <i>Note: Also includes converted cases for histology 9654</i>	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9655	Hodgkin lymphoma, lymphocyte depletion, reticular	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9659	Hodgkin lymphoma, nodular lymphocyte predominance	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0

ICD-O code	Description	Primary Site must not be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9663	Hodgkin lymphoma, nodular sclerosis, NOS <i>Note: Also includes converted cases for histologies 9664, 9665 & 9667</i>	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	3	0
9671	Malignant lymphoma, lymphoplasmacytic	C420, C423, C424	This histology is very similar to 9761, which is Waldenstrom Macroglobulinemia (WM) and is the only histology that has primary site C420. Confirm histology. If the diagnosis is WM, change histology to 9761 <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	7	36
9673	Mantle cell lymphoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	4	12
9678	Primary effusion lymphoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9680	Malignant lymphoma, large B-cell, diffuse, NOS <i>Note: Also includes converted cases for histology 9684</i>	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	1	5
9687	Burkitt lymphoma, NOS	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	2
9688	T-cell/histiocyte-rich large B-cell lymphoma	C420, C423, C424	Per Heme Database: primarily a nodal lymphoma (C770-C779) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9690	Follicular lymphoma, NOS <i>Note: Also includes converted cases for histology 9675.</i>	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	1	2
9691	Follicular lymphoma, grade 2	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	1	0

ICD-O code	Description	Primary Site must not be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9695	Follicular lymphoma, grade 1	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9698	Follicular lymphoma, grade 3	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	1
9699	Marginal zone B-cell lymphoma, NOS	C420, C422, C423, C424	Per Heme Database: this is not a splenic marginal zone lymphoma. Confirm histology. If this is a splenic marginal zone lymphoma, change primary site to C422 and histology to 9689. If this is not a splenic marginal zone lymphoma, change primary site (cannot be C422) <i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	75	207
9700	Mycosis Fungoides	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	0	0
9701	Sezary syndrome	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	0	0
9702	Mature T-cell lymphoma, NOS	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	5
9705	Angioimmunoblastic T-cell lymphoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9708	Subcutaneous panniculitis-like T-cell lymphoma	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	0	0

ICD-O code	Description	Primary Site must not be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9709	Cutaneous T-cell lymphoma	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	0	0
9712	Intravascular large B-cell lymphoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	1
9714	Anaplastic large cell lymphoma, T cell and Null cell type	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	1	1
9717	Enteropathy-associated T-cell lymphoma	C420, C423, C424	Per Heme Database: primarily an intestinal lymphoma. Most common primary site jejunum (C171). Verify primary site/histology <i>If no other information can be found to determine primary site, default to C171 (jejunum)</i>	0	0
9718	Primary cutaneous CD30-positive T-cell lymphoproliferative disorder	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	0	1
9719	Extranodal NK/T cell lymphoma, nasal type	C420, C423, C424	Per Heme Database: primarily a nasal cavity (C300) lymphoma. Verify histology first. <i>If no other information can be found to determine primary site, default to C300</i>	0	0
9724	Systemic EBV-positive T-cell lymphoproliferative disease of childhood	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	1

ICD-O code	Description	Primary Site must not be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9725	Hydro vacciniforme-like lymphoma	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	0	0
9726	Primary cutaneous gamma delta T-cell lymphoma	C420, C423, C424	Per Heme Database: primarily a skin lymphoma (C440-C449, C510-C512, C518-C519, C600-C602, C608-C609, C632) <i>If no other information can be found to determine primary site, default to C449 (Skin, NOS)</i>	0	0
9727	Blastic plasmacytoid dendritic cell lymphoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9734	Extrasosseous plasmacytoma (not of bone)	C400-C419, C420, C423, C424	Per Heme Database: this is a plasmacytoma that does not occur in the bone. Review primary site/histology combination. If this is a bone plasmacytoma, change histology to 9731. If this is not a bone plasmacytoma, reassign primary site to something other than C400-C419.	4	9
9735	Plasmablastic lymphoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9737	ALK-positive large B-cell lymphoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9738	Large B-cell lymphoma arising in HHV8 associated multicentric Castleman disease	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	0	0
9740	Mast cell sarcoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C499 (Soft tissue, NOS)</i>	0	1

ICD-O code	Description	Primary Site must not be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9751	Langerhans cell histiocytosis <i>Note: Also includes converted cases for histology 9750, 9752, 9753, 9754</i>	C420, C423, C424	Per Heme Database: primarily a bone neoplasm (C400-C419). If a bone primary is confirmed and specific site cannot be determined, assign C419 (bone, NOS)	0	6
9755	Histiocytic sarcoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C499 (Soft tissue, NOS)</i>	0	1
9756	Langerhans cell sarcoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C499 (Soft tissue, NOS)</i>	0	0
9757	Interdigitating dendritic cell sarcoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C499 (Soft tissue, NOS)</i>	0	1
9758	Follicular dendritic cell sarcoma	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C499 (Soft tissue, NOS)</i>	0	0
9759	Fibroblastic reticular cell tumor	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C499 (Soft tissue, NOS)</i>	0	0
9930	Myeloid Sarcoma	C420, C421, C423, C424	Per ICD-O-3 and the Heme DB: 9930 cannot have primary site C421. Most common primary sites for Myeloid Sarcoma are the soft tissues. <i>If no other information can be found to determine primary site, default to C499 (Soft tissue, NOS)</i>	21	71
9971	Post-transplant lymphoproliferative disorder	C420, C423, C424	<i>If no other information can be found to determine primary site, default to C779 (lymph nodes, NOS)</i>	1	0

TABLE 4: Manual review for histologies

Reference: Hematopoietic Database, <http://www.seer.cancer.gov/seertools/hemelymph/>

Note: Review may also include review of other CS fields if the change to site or histology changes the CS schema. After making changes, rerun the CS algorithms.

Note: The national standard setters are requiring this manual review. SEER and NPCR have provided the number of cases for 2010-2012 in the table below. A specific hospital or state/central registry may not have any cases. Due to the low numbers, this review will ordinarily not be time consuming. If the review/changes are not done, cases will fail the revised edits that will be in the NAACCRv15 Metafile.

1. The histologies in table 4 have primary site/histology combinations based on the Hematopoietic database. Cases that do not meet the primary site specifications need to be changed. These cases cannot be automatically converted and manual review is needed.
2. For these cases, the histology may need to be changed instead of the primary site. Comments are provided to help determine the best primary site/histology combination. Additional information about each of the diseases can be found in the HEME database: <http://seer.cancer.gov/seertools/hemelymph/>
3. **Upon review a change to the primary site or histology may cause the CS schema to change and other fields based on site and histology may also need to be updated such as surgery codes and scope of regional lymph node surgery. It is very important to also review other affected data fields when changing primary site or histology.**
4. Edits are being revised for the histologies in Table 4. The edits will go into effect for diagnosis date 1/1/2010 and forward.

For cases diagnosed 1/1/2010+:

ICD-O code	Description	Primary Site MUST be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9679	Mediastinal large B-cell lymphoma	C379 or C383	Per Heme Database: histology occurs either in the thymus (C379) or the anterior mediastinum (C383). <i>Do not assign this histology just because the mediastinum is involved. Only assign this histology when the diagnosis is stated as "primary mediastinal."</i> <i>Involvement of the mediastinum is common for other histologies, with DLBCL (9680/3) being the most common. This is also a large B-cell lymphoma.</i> <i>If no other information can be found to determine primary site, default to C383 (Anterior Mediastinum)OR change histology to 9680.</i>	102	169

ICD-O code	Description	Primary Site MUST be	Comments	# SEER Cases 2010-2012	# NPCR Cases 2010-2012
9689	Splenic marginal zone B-cell lymphoma	C422	Per Heme Database: this is a splenic lymphoma. Verify primary site/histology. If the lymphoma originated in the spleen, change primary site to C422 (spleen) . If this is not a splenic marginal zone lymphoma, change histology to 9699. See Table 3 for more information on 9699.	1	19
9716	Hepatosplenic T-cell lymphoma	C422	Per Heme Database: this is a splenic lymphoma. Verify primary site/histology. If the lymphoma originated in the spleen, change primary site to C422 (spleen).	0	2
9731	Solitary plasmacytoma of bone	C400-C419	Per Heme Database: this is a plasmacytoma that occurs in the bone. Review primary site/histology combination. If this is a bone plasmacytoma, change primary site to C400-C419 (assign C419 if specific bone site cannot be determined. See Rule PH4 in the Hematopoietic manual). If this is not a bone plasmacytoma, reassign histology to 9734. See Table 3 for more information on 9734.	0	131