

# HEMATOPOIETIC AND LYMPHOID NEOPLASMS



- Blood cancers affect the production and function of the blood cells
- Most of these cancers start in the bone marrow where blood is produced
- Stem cells in the bone marrow mature and develop into three types of blood cells: red blood cells, white blood cells, or platelets





# The Hematopoietic Project

- <https://seer.cancer.gov/tools/heme/>
- This site provides data collection rules for hematopoietic and lymphoid neoplasms for 2010+.
- There are two tools for use with these rules:
  - Hematopoietic & Lymphoid Neoplasm Database (Heme DB)
  - A tool to assist in screening for reportable cases and determining reportability requirement
- The database contains abstracting and coding information for all hematopoietic and lymphoid neoplasm (9590/3-9992/3)
- [Hematopoietic & Lymphoid Neoplasm Coding Manual](#) (PDF, 1.0 MB)
- Reportability instructions and rules for determining the number of primaries, the primary site and histology, and the cell lineage or phenotype
- The introduction to the manual has an updated Steps in Priority Order for using the Hematopoietic and Lymphoid Neoplasm Coding Manual & Database.



**Leukemia**, a type of cancer found in your blood and bone marrow, is caused by the rapid production of abnormal white blood cells. The high number of abnormal white blood cells are not able to fight infection, and they impair the ability of the bone marrow to produce red blood cells and platelets.



- Leukemia can be either acute or chronic
  - Chronic leukemia progresses more slowly than acute leukemia
  - Acute requires immediate treatment
- 
- Acute lymphocytic leukemia (ALL)
  - Acute myelogenous leukemia (AML)
  - Chronic lymphocytic leukemia (CLL)
  - Chronic myelogenous leukemia (CML)



# Signs and Symptoms

- Symptoms vary depending on the type and stage of leukemia, but they can include the following:
- Fever, chills, night sweats and other flu-like symptoms
- Weakness and fatigue
- Swollen or bleeding gums
- Headaches
- Enlarged liver and spleen
- Swollen tonsils
- Bone pain
- Paleness
- Pinhead-size red spots on the skin
- Weight loss



- Treatments could include chemotherapy, biological therapy, radiation therapy, and stem cell transplantation or a combination of these treatments
- Because the cells divide more slowly in chronic leukemia, it is better treated with targeted therapies that attack slowly dividing cells as opposed to traditional chemotherapy that targets rapidly dividing cells



**Lymphoma** is a type of blood cancer that affects the lymphatic system, which removes excess fluids from your body and produces immune cells. Lymphocytes are a type of white blood cell that fight infection. Abnormal lymphocytes become lymphoma cells, which multiply and collect in your lymph nodes and other tissues. Over time, these cancerous cells impair your immune system.



- Lymphomas are divided into two categories: Hodgkin lymphoma and non-Hodgkin lymphoma. About 12 percent of people with lymphoma have Hodgkin lymphoma.



# Biopsies

The most accessible involved lymph node or site is usually biopsied when lymphoma is suspected

**Example,** if a CT or PET scan identified enlarged cervical and mediastinal lymph nodes, the physician would biopsy the cervical lymph nodes because that would be the least invasive procedure (cervical nodes are more accessible than the mediastinal nodes)

Do not assume that the more accessible site chosen for biopsy is the primary site

Follow the primary site rules and instructions when coding Primary Site





# Signs and Symptoms

- Swollen lymph nodes in the neck, armpits, or groin
- Fever
- Weakness and fatigue
- Weight loss
- Sweating
- Difficulty breathing or chest pain
- Itchy skin
- Rash



## **Treatment options include the following:**

- Chemotherapy
- Chemotherapy and radiation that directly targets the lymphoma
- Biological therapies, such as antibodies, directed at lymphoma cells
- Stem cell transplant



**Myeloma** is a cancer of the plasma cells. Plasma cells are white blood cells that produce disease- and infection-fighting antibodies in your body. Myeloma cells prevent the normal production of antibodies, leaving your body's immune system weakened and susceptible to infection.



# Signs and Symptoms

- Excessive calcium in the blood
- Anemia (shortage or reduced function of red blood cells)
- Renal damage (kidney failure)
- Susceptibility to infection
- Osteoporosis, bone pain, bone swelling, or fracture
- High protein levels in the blood and/or urine
- Weight loss



- Treatment options for myeloma include the following:
- Chemotherapy
- Immunomodulators (drugs that target specific areas of the immune system)
- Anemia drugs
- Radiation therapy
- Stem cell transplant
- Medicines to improve bone health



# DIAGNOSTIC CONFIRMATION



# Diagnostic Confirmation

## Hematopoietic Manual

### Pages #17-21

Other than microscopic confirmation (1-4) taking priority over clinical diagnosis only (5-8), there is no priority order or hierarchy for coding the Diagnostic Confirmation for hematopoietic or lymphoid neoplasms. Most commonly the bone marrow provides several provisional diagnoses and the specific histologic type is determined through immunophenotyping or genetic testing



If a neoplasm is originally confirmed by histology (code 1), and later has immunophenotyping or genetic testing which confirms a more specific neoplasm and there is no evidence of transformation, change the histology code to the more specific neoplasm and change the diagnostic confirmation to code 3.





### *Microscopically Confirmed*

| Code | Description   |
|------|---|
| 1    | Positive histology <ul style="list-style-type: none"><li>• Includes: peripheral blood smear only</li></ul>  |
| 2    | Positive cytology   |
| 3    | Positive histology PLUS: <ul style="list-style-type: none"><li>• Positive immunophenotyping AND/OR</li><li>• Positive genetic studies</li><li>• Includes: peripheral blood smear followed by flow cytometry<br/><i>(Effective for cases diagnosed 1/1/2010 and later)</i></li></ul> |
| 4    | Positive microscopic confirmation, method not specified   |



### *Not Microscopically Confirmed*

| Code | Description   |
|------|---|
| 5    | Positive laboratory test/marker study<br><b>Note 1:</b> Includes cases with positive immunophenotyping or genetic studies and <b>no</b> histological confirmation<br><b>Note 2:</b> This does <b>not</b> include cases where a peripheral blood smear is done (code 1) and peripheral blood smear followed by flow cytometry (code 3) |
| 6    | Direct visualization without microscopic confirmation   |
| 7    | Radiology and other imaging techniques without microscopic confirmation   |
| 8    | Clinical diagnosis only (other than 5, 6 or 7)  |



### *Confirmation Unknown*

| <b>Code</b> | <b>Description</b>   |
|-------------|--|
| 9           | Unknown whether or not microscopically confirmed; death certificate only |



# DIAGNOSTIC CONFIRMATION RECORDING

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INSERT DATE





# Diagnostic Confirmation field in the Database (Histology 9865/3)

Help me code for diagnosis year .

2021

Coding Manual: [Hematopoietic Coding Manual \(PDF\)](#)

## Abstractor Notes

(This [code](#) is effective for [cases](#) diagnosed 2010 and later. For [cases](#) diagnosed prior to 2010, see [code](#) 9861/3.)

This AML has a generally poor [prognosis](#). Elevated [white blood](#) cell counts are most predictive of shorter overall [survival](#) and increased BM blasts are associated with shorter free [survival](#). Very limited [data](#) available regarding [treatment](#) or [survival](#).

In adults the [WBC](#) is generally lower than other AML types. The BM may have morphologic and cytochemical features of any FAB subtype of AML other than [acute](#) promyelocytic [leukemia](#) and [acute](#) megakaryoblastic [leukemia](#).

If the [leukemia](#) occurs before or [simultaneously](#) with Myeloid Sarcoma (9930/3), see M3 and Module 5:PH10.

## Diagnostic Confirmation

This AML is part of the "AML with recurrent genetic abnormalities" group. Since this AML is diagnosed based on genetics, diagnostic confirmation will always be 3.

## Grade

Not Applicable

M 1 1 3 1



2021

Coding Manual: [Hematopoietic Coding Manual \(PDF\)](#)

### Abstractor Notes

MDS with associated del(5q) is an MDS involves that [blood](#) and [bone marrow](#).

For MDS diseases (9980, 9982, 9983, [9985](#), 9986, 9989, 9991, 9992, 9993), [abstracting](#) each of the subtypes would result in over-counting of the diseases.

1. [Code](#) only the first subtype that is diagnosed.
2. Do not change the [histology code](#) or create a new [abstract](#) for any subsequent specific MDS subtypes

Recently the thalidomide [analog](#) lenalidomide has been shown to benefit MDS patients. [Transfusion](#) independence was achieved in two-thirds of patients.

### Diagnostic Confirmation

This histology can only be determined by positive genetics and/or immunophenotyping, diagnostic confirmation will always be 3.

### Grade

Not Applicable

### Module Rule

None



# Diagnostic Confirmation field in the Database (Histology 9590/3)

Coding Manual: [Hematopoietic Coding Manual \(PDF\)](#)

## Abstractor Notes

This NOS [histology](#) is a [generic](#) disease description. [DCO cases](#) or path report only [cases](#) may stay in this classification. In most [cases](#), an NOS [histology](#) is only the working [diagnosis](#); the physician will run further [diagnostic procedures](#) and look for various clinical presentations to identify a more specific disease.

Further review of the [medical record](#) should be performed to look for the tests listed as [definitive diagnosis](#). When a more specific [diagnosis](#) is identified, the [histology](#) should be changed to the more specific neoplasm name and [code](#).

For [9590/3 malignant lymphoma](#), NOS, [non-Hodgkin lymphoma](#), classical [Hodgkin lymphoma](#), and any specific Hodgkin and non-Hodgkin lymphomas would be a more specific [histology](#).

See the [histology tables](#) ([Appendix B](#) of the [Hematopoietic](#) manual) for more information on NOS and more specific histologies.

## Diagnostic Confirmation

This is a histology for which the Definitive Diagnostic Method does not include Genetics Data or Immunophenotyping, thus Diagnostic Confirmation should never be 3. If genetics and/or immunophenotyping are available, re-review to see if a more specific neoplasm can be coded.

## Grade

Not Applicable

## Module Rule

None





# Diagnostic Confirmation field in the Database (Histology 9680/3)

Coding Manual: [Hematopoietic Coding Manual \(PDF\)](#)

## Abstractor Notes

Patients may present with nodal or [extranodal](#) disease. The most common [extranodal site](#) is the gastrointestinal [site](#) (stomach and ileocecal region). Other common [sites](#) of [extranodal](#) presentation include the [bone](#), testes, [spleen](#), [Waldeyer ring](#), [salivary glands](#), [thyroid](#), [liver](#), [kidneys](#), and [adrenal glands](#).

Patients usually present with a rapidly enlarging tumor [mass](#) at single or multiple nodal or [extranodal sites](#). Many patients are [asymptomatic](#), but B [symptoms](#) may be present. Specific localizing [symptoms](#) may be present and are highly dependent on the [site](#) of [extranodal](#) involvement.

For more information on [lymphoma](#), see the [NCI](#) website: [http://www.cancer.gov/types/lymphoma/hp/adult-nhl-treatment-pdq#section/\\_1](http://www.cancer.gov/types/lymphoma/hp/adult-nhl-treatment-pdq#section/_1) or [http://www.cancer.gov/types/lymphoma/patient/adult-nhl-treatment-pdq#section/\\_129](http://www.cancer.gov/types/lymphoma/patient/adult-nhl-treatment-pdq#section/_129)

## Diagnostic Confirmation

This histology can be determined by positive histology (including peripheral blood) with or without genetics and/or immunophenotyping. Review the Definitive Diagnostic Methods, Immunophenotyping and Genetics Data sections below, and the instructions in the Hematopoietic Manual for further guidance on assigning Diagnostic confirmation.

## Grade

Not Applicable

## Module Rule

Module 6: PH11, PH13

## Alternate Names



## Choosing the Right Year

- Make sure that you have the right year
- Look for “Help me code for diagnosis year”
- Make sure that if you are working on a 2020 or earlier case, that the year chosen is 2020
- If you have a 2021 case, make sure the diagnosis year 2021 is chosen
- This is extremely importantly for
  - New histologies, obsolete histologies, changes in behavior

**Help me code for diagnosis year :**

**2021**



# Preferred primary sites in Heme DB

[Home](#)[Cancer Statistics](#)▼[SEER Data & Software](#)▼[Registry Operations](#)▼

[Search Database](#)[ICD-O-3 Code Lists](#)

## Name

Classic [Hodgkin lymphoma](#)

### ICD-O-1 Morphology

Effective 1978 - 1991

[9650/3](#): [Hodgkin lymphoma](#), NOS

### ICD-O-2 Morphology

Effective 1992 - 2000

[9650/3](#): [Hodgkin lymphoma](#), NOS  
9661/3: [Hodgkin granuloma](#)  
9662/3: [Hodgkin sarcoma](#)

### ICD-O-3 Morphology

Effective 2001 and later

[9650/3](#): [Hodgkin lymphoma](#), NOS

## Reportable

for cases diagnosed 1978 and later

## Primary Site(s)

C770-C779

Lymph nodes (C770-C779) are the usual primary sites; however, involvement in others sites is possible. If you have confirmation that the only involved site is something other than the lymph nodes, then code to that primary site. See also Module 7.

**For Hodgkin Lymphomas, the most common primary sites are the lymph nodes**

**This does not mean that Hodgkin lymphoma can't occur in other sites, just that it's very rare**

**If lymph nodes are involved, along with other sites, then the other sites are going to be mets**



# Preferred primary sites in Heme DB

**For CLL/SLL, the most common primary sites are the lymph nodes, bone marrow and peripheral blood**

**CLL/SLL can occur in other sites, but it's very rare**

**If one of the above is involved and there is additional involvement, then the other involvement is mets**

[Home](#)[Cancer Statistics](#)[SEER Data & Software](#)[Registry](#)

[Search Database](#)[ICD-O-3 Code Lists](#)

**Name**  
Chronic lymphocytic leukemia/small lymphocytic lymphoma

**ICD-O-1 Morphology** Effective 1978 - 1991  
**9823/3:** Chronic lymphocytic leukemia/SLL

**ICD-O-2 Morphology** Effective 1992 - 2000  
**9823/3:** Chronic lymphocytic leukemia/SLL

**ICD-O-3 Morphology** Effective 2001 and later  
**9823/3:** Chronic lymphocytic leukemia/SLL

**Reportable**  
for cases diagnosed 1978 and later

**Primary Site(s)**  
See Module 3: Rules PH5, PH6  
Most common sites of involvement: bone marrow, peripheral blood, lymph nodes



# Preferred primary sites in Heme DB

[Home](#)[Cancer Statistics](#)[SEER Data & Software](#)

[Search Database](#)[ICD-O-3 Code Lists](#)

## Name

Diffuse large B-cell lymphoma, NOS

## ICD-O-1 Morphology

9612/3: Malignant lymphoma, immunoblastic type  
9632/3: Malignant lymphoma, centroblastic type, NOS

## ICD-O-2 Morphology

Effective 1992 - 2000

9680/3: Malignant lymphoma, large B-cell, diffuse, NOS  
9681/3: Malignant lymphoma, large cell, cleaved, diffuse  
9682/3: Malignant lymphoma, large cell, noncleaved, diffuse  
9712/3: Angioendotheliomatosis

## ICD-O-3 Morphology

Effective 2001 and later

9680/3: Malignant lymphoma, large B-cell, diffuse, NOS

## Reportable

for cases diagnosed 1992 and later

## Primary Site(s)

See Abstractor Notes and Module 7

**DLBCL is a lymphoma that can occur anywhere in the body. It's one of the few lymphomas that can originate in the spleen, liver, brain, which are usually metastatic sites**

**Abstractor notes provide more information on the different types of presentations and the different terminology used for those**



# Mets at Dx Fields (Bone, Brain, Liver, Lung, Distant Lymph Nodes, Other)

**Per the SEER 2022 manual** ([SEER Program Coding and Staging Manual \(cancer.gov\)](https://seer.cancer.gov/coding/staging-manual/))

**Use code 8 (Not applicable) for the following**

- Any case coded to primary site C<sub>420</sub>, C<sub>421</sub>, C<sub>423</sub>, C<sub>424</sub>, or C<sub>770</sub>-C<sub>779</sub>
- Plasma Cell Disorders 00822
- These instructions include the following:
- All leukemias (primary site must be C<sub>421</sub>)



**For questions about coding Hematopoietic Neoplasms (Primary Site, Histology, EOD/Summary Stage, Treatment)**

**Please post to Ask SEER Registrar**

**<https://seer.cancer.gov/registrars/contact.html>**

**For Primary Site, Histology: Choose under “Reporting Guidelines”: Hematopoietic Rules (database and manual)**

**For EOD/Summary Stage: Choose under “Staging”, Extent of Disease or Summary Stage**

**For Treatment: Choose under “Reporting Guidelines”: SEER\*Rx**



## Choose a subject

Please choose the most appropriate subject for your question. Hover over the **?** for subject if needed. **Questions submitted under the wrong subject require extra time to delayed response, as staff must manually triage your question.**

### Reporting Guidelines

- ☐ Solid Tumor Rules (for cases diagnosed 2018+) **?**
- ☐ Multiple Primary & Histology Rules (for cases diagnosed 2007-2017) **?**
- ☐ ICD-O-3 Update (for cases diagnosed 2018+) **?**
- ☐ Hematopoietic Rules (database and manual) **?**
- ☐ SEER Manual **?**
- ☐ SEER\*Rx **?**

### Staging

- ☐ Extent of Disease (EOD 2018)
- ☐ Summary Stage 2018 (SS2018)
- ☐ Collaborative Stage (for cases diagnosed 2016-2017)
- ☒ Other

<https://seer.cancer.gov/registrars/contact.html>





# QUESTIONS?

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