

Instructions for Hodgkin’s and Non-Hodgkin’s Lymphoma Pre-HSCT Data (Form 2018)

This section of the CIBMTR Forms Instruction Manual is intended to be a resource for completing the Hodgkin’s and Non-Hodgkin’s Lymphoma Pre-HSCT Data Form.

E-mail comments regarding the content of the CIBMTR Forms Instruction Manual to: CIBMTRFormsManualComments@nmdp.org. Comments will be considered for future manual updates and revisions. For questions that require an immediate response, please contact your transplant center’s CIBMTR liaison.

TABLE OF CONTENTS

Key Fields	4
Disease Assessment at Diagnosis	5
Stage at Time of Diagnosis	7
Pre-HSCT Treatment for Non-Hodgkin’s Lymphoma/Hodgkin’s Lymphoma	11
Most Recent Disease Assessment Prior to the Start of the Preparative Regimen	16

Hodgkin’s and Non-Hodgkin’s Lymphoma Pre-HSCT Data

Hodgkin’s lymphoma (HL or Hodgkin’s disease) is a cancer of the immune system that is marked by the presence of a type of cell called the Reed-Sternberg cell. The two major types of Hodgkin’s lymphoma are classical Hodgkin’s lymphoma (90-95% of cases) and nodular lymphocyte-predominant Hodgkin’s lymphoma (5-10% of cases).

Classical Hodgkin’s lymphoma can be further subdivided into four histologic subtypes: nodular sclerosis (NS), mixed cellularity (MC), lymphocyte deplete (LD), and lymphocyte rich (LR). Symptoms include the painless enlargement of lymph nodes, spleen, or other immune tissue. Generalized pruritus is also common and may precede the diagnosis by months. The most common sites of involvement include cervical, supraclavicular, and mediastinal lymph nodes. Central nervous system involvement may occur in rare cases. Other symptoms include fever, weight loss, fatigue, and/or night sweats.

Non-Hodgkin's lymphoma (NHL) is a large group of cancers derived from lymphocytes (white blood cells). Non-Hodgkin's lymphomas can occur at any age and are often marked by enlarged lymph nodes, fever, night sweats and weight loss. There are many different types of non-Hodgkin's lymphoma. These types can be divided into aggressive (fast-growing), intermediate, or indolent (slow-growing) and can develop from either B-cells or T-cells. See Table 1.

Due to the aggressive nature of Precursor T- and Precursor B-cell lymphoblastic lymphoma (or lymphoma/leukemia), the primary disease reported for recipients with these malignancies should be acute lymphoblastic leukemia (Precursor T-cell ALL or Precursor B-cell ALL).

Lymphomas that occur after bone marrow or stem cell transplantation are usually B-cell non-Hodgkin's lymphomas and are collectively known as post-transplant lymphoproliferative disorders (PTLD).

Table 1. Types of Non-Hodgkin's Lymphomas

B-cell Neoplasms	T-cell and NK-cell Neoplasms
Burkitt's lymphoma/Burkitt cell leukemia {ALL L3} (111)	Adult T-cell lymphoma/leukemia (HTLV1+) (134)
High-grade B-cell lymphoma, Burkitt-like (provisional entity) (135)	Aggressive NK-cell leukemia (27)
Diffuse large B-cell lymphoma (DLBC) (107) If known, indicate subtype: <ul style="list-style-type: none"> • Intravascular large B-cell lymphoma (136) • Mediastinal large B cell lymphoma (125) • Primary effusion lymphoma (138) • Diffuse large B-cell lymphoma, subtype unknown 	Anaplastic large-cell lymphoma, T/null cell, primary cutaneous type (147)
Extranodal marginal zone B-cell lymphoma of MALT type (122)	Anaplastic large-cell lymphoma, T/null cell, primary systemic type (148)
Follicular lymphoma (includes variants) <ul style="list-style-type: none"> • Grade I: predominantly small cleaved cell (102) • Grade II: mixed, small cleaved, and large cell (103) • Grade III: predominantly large cell (104) • Unknown: follicular grade (164) 	Angioimmunoblastic T-cell lymphoma (AILD) (131)
Lymphoplasmacytic lymphoma (121)	Enteropathy-type T-cell lymphoma (133)
Mantle cell lymphoma (115)	Extranodal NK/T-cell lymphoma, nasal type (137)

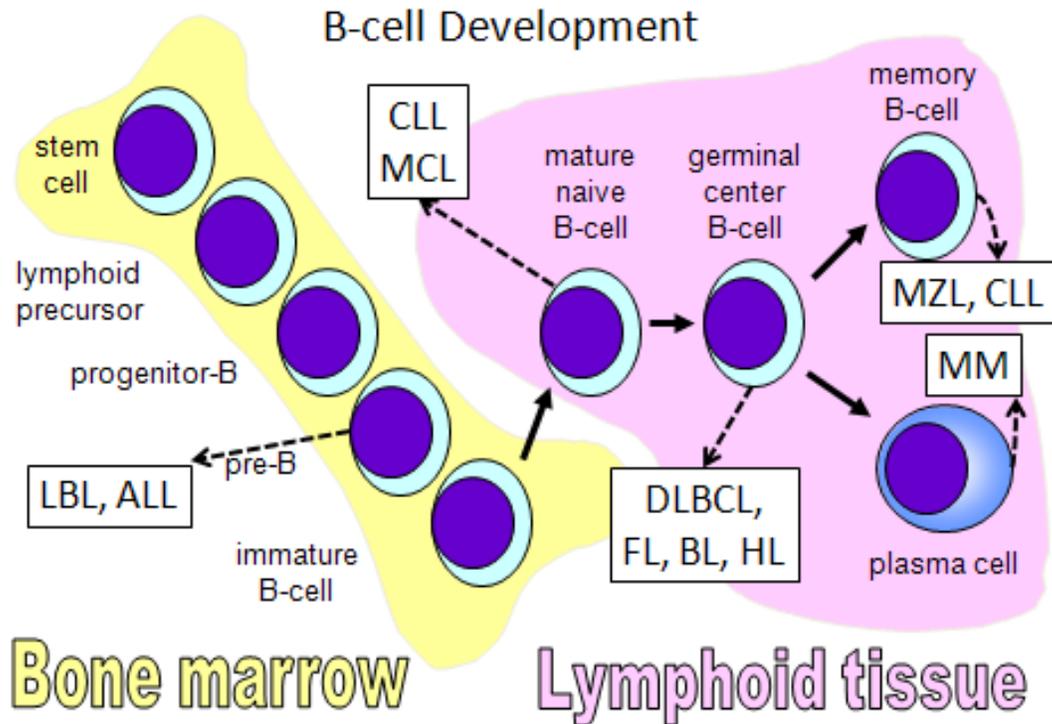
Nodal marginal zone B-cell lymphoma (+/- monocytoïd B cells) (123)	Hepatosplenic gamma-delta T-cell lymphoma (145)
Primary CNS lymphoma (118)	Mycosis fungoides (141)
Splenic marginal zone B-cell lymphoma (124)	Peripheral T-cell lymphoma {NOS} (130)
Waldenstrom macroglobulinemia (173)	Subcutaneous panniculitis-like T-cell lymphoma (146)
Other B-cell lymphoma (129)	Sezary syndrome (142)
	Large T-cell granular lymphocytic leukemia (126)
	Other T/NK cell lymphoma (139)

Table 2. How does HL differ from NHL?

	HL	NHL
Subtypes	2	> 30
Peak Age	20s	Over age 60
Cases/year	8,000	60,000
Common Sites	Neck, mediastinum	Various
Severity of Symptoms	Usually mild	Often severe
5-year Survival Rate	> 80%	Varies

[Graphic 1](#) shows the development of B-cells from stem cells in the bone marrow to memory B-cells and plasma cells in the lymphoid tissue. Neoplasms may develop at different points during B-cell development, including diffuse large B-cell lymphoma from germinal center B-cells or mantle cell lymphoma from memory B-cells.

Graphic 1. B-cell Development.



This form must be completed for all recipients whose primary disease, reported on Form 2000 question 9, is Hodgkin's Lymphoma (HL) or non-Hodgkin's Lymphoma (NHL), with the exception of Waldenstrom macroglobulinemia (MAC).

Key Fields

Accuracy of the Key Fields is essential for ensuring that:

- Data are being reported for the correct recipient.
- Transplant centers have access to their data.
- Data are being shared with the correct donor center, cord blood bank, cooperative registry, or other agency.

For instructions regarding the completion of the Key Fields, see [Appendix K](#). Key fields include all fields listed in the box found in the upper right-hand corner of the first page of the paper form, or on the "key page" in the FormsNet™ application.

NOTE:

If this is a report of a second or subsequent transplant, check the box and continue with question 129. The data that only occur once during the initial diagnosis should have already been reported.

Disease Assessment at Diagnosis

Question 1: What was the date of diagnosis of lymphoma?

Report the date of the first pathological diagnosis (e.g., lymph node biopsy) of lymphoma. Enter the date the sample was collected for examination. If the diagnosis was determined at an outside center, and no documentation of a pathological or laboratory assessment is available, a dictated date within a physician note may be reported. Do not report the date symptoms first appeared. The date of diagnosis is important because the interval between diagnosis and HSCT is often a significant indicator for the recipient's prognosis post-HSCT.

If, during the course of the disease the subtype transforms (typically to a more aggressive type), report the earliest date of diagnosis. The date of diagnosis prior to transformation should also be reported on the Pre-TED form for the first HSCT reported.

Questions 2-3: What was the lymphoma histology at diagnosis?

NOTE:

If the recipient has multiple types of lymphoma at diagnosis, report the least aggressive lymphoma histology at diagnosis (question 2) and most aggressive histology as a transformation (question 5). Use the date of diagnosis as the date of transformation.

For example, if a recipient has evidence of both follicular lymphoma and diffuse large B-cell lymphoma at the time of diagnosis, follicular lymphoma should be reported on question 2 and the diffuse large b-cell lymphoma should be reported on question 5.

Indicate the lymphoma histology by selecting the specified 2-digit key code from the list located on the form. Please note that these codes are utilized for data entry purposes and are not the same as the CIBMTR database codes. If codes 23 (Other B-cell lymphoma) or 33 (Other T-cell lymphoma) are selected, specify the type in question 3.

NOTE:

Question 3 currently contains an error. The form states that codes 22 and 32 require the specify line, but this should be **23 and 33**. The CIBMTR is in the process of updating this form.

Question 4: Is the current histology a transformation from CLL?

In some cases, CLL may evolve to a more aggressive diffuse large B-cell lymphoma (DLBCL). This is commonly referred to as Richter's syndrome or Richter's Transformation.

If the current histology is a transformation from CLL, indicate "yes," continue with question 5, and also complete Form 2013.

If the current histology is not a transformation from CLL, indicate "no" and continue with question 5.

NOTE:

The directions for Question 4 currently contain an error. The directions states that the Form 2000 should be completed if a transformation from CLL is indicated. The correct form to report a transformation from CLL is 2013, Chronic Lymphocytic Leukemia Pre-HSCT Data. The CIBMTR is in the process of updating this form.

Question 5: Did histologic transformation occur after diagnosis?

Transformation may occur when a slow-growing lymphoma with an indolent clinical history changes to a more aggressive lymphoma histologically and clinically. An example of a common transformation would include follicular lymphoma evolving to a diffuse large B-cell lymphoma (DLBCL).

If a histologic transformation occurred after diagnosis, indicate "yes," and continue with Question 6.

If a histologic transformation did not occur after diagnosis, indicate "no," and continue with question 9.

Question 6: Date of transformation

Enter the date the transformation was first documented (e.g., lymph node biopsy). Use the date the sample was collected for examination. If the transformation date was determined at an outside center and no documentation of a pathological or laboratory assessment is available, a dictated date within a physician note may be reported.

If the recipient had multiple lymphoma histologies at diagnosis, report the most aggressive lymphoma as a transformation. Use the date of diagnosis as the date of transformation.

If the exact pathological diagnosis date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Questions 7-8: Latest histology

Indicate the transformed lymphoma histology by selecting the specified 2-digit code from the list located on the form under question 2. If codes 23 or 33 are selected, specify in question 8.

If the recipient had multiple lymphoma histologies at diagnosis, report the most aggressive lymphoma as a transformation.

NOTE:

Question 8 currently contains an error. The form states that codes 22 and 32 require the specify line, but this should be **23 and 33**. The CIBMTR is in the process of updating this form.

Stage at Time of Diagnosis

Questions 9-10: Did the recipient have any known organ involvement at diagnosis?

An initial exam may include a history (including [systemic “B” symptoms](#)), lymph node measurements, CT scan, PET scan, biopsy, and/or specialized pathological tests to determine the disease subtype. Examples of specialized pathological tests include flow cytometry, protein stains, chromosome tests (e.g., FISH), and molecular tests.

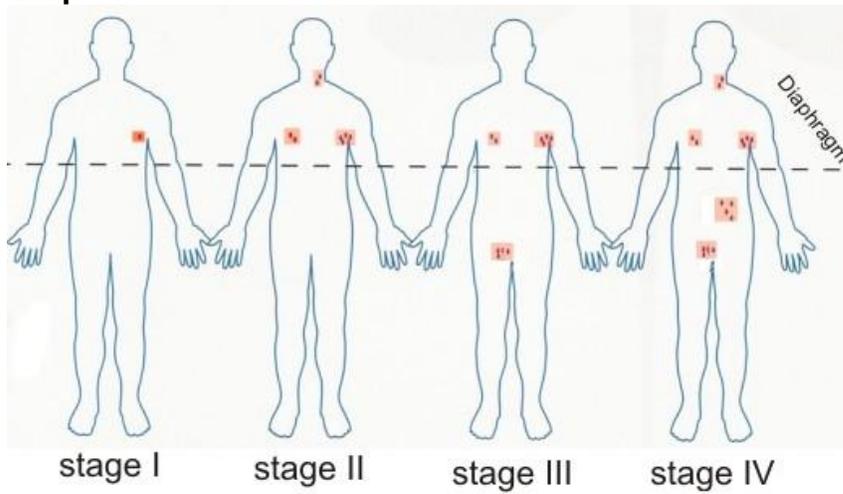
Use the staging criteria below to indicate the organ involvement at diagnosis. If “Other organ involvement,” specify using question 10.

Table 3.

LYMPHOMA STAGING	
Stage I	Involvement of a single lymph node region or of a single extralymphatic organ or site
Stage II	Involvement of two or more lymph node regions on same side of diaphragm, or localized involvement of extralymphatic organ or site and one or more lymph node regions on same side of diaphragm
Stage III	Involvement of lymph node regions on both sides of diaphragm, which may also be accompanied by localized involvement of extralymphatic organ or site, or the spleen, or both
Stage IV	Diffuse or disseminated involvement of one or more extralymphatic organs in tissues with or without associated lymph node enlargement/involvement

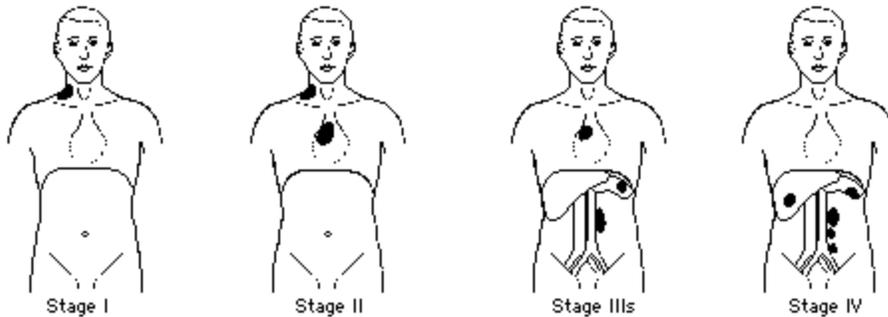
National Marrow Donor Program® and The Medical College of Wisconsin

Graphic 2.



"Staging Lymphomas." *Patients Against Lymphoma*. Web. 02 May 2012.
<http://www.lymphomation.org/stage.htm>.

Graphic 3.

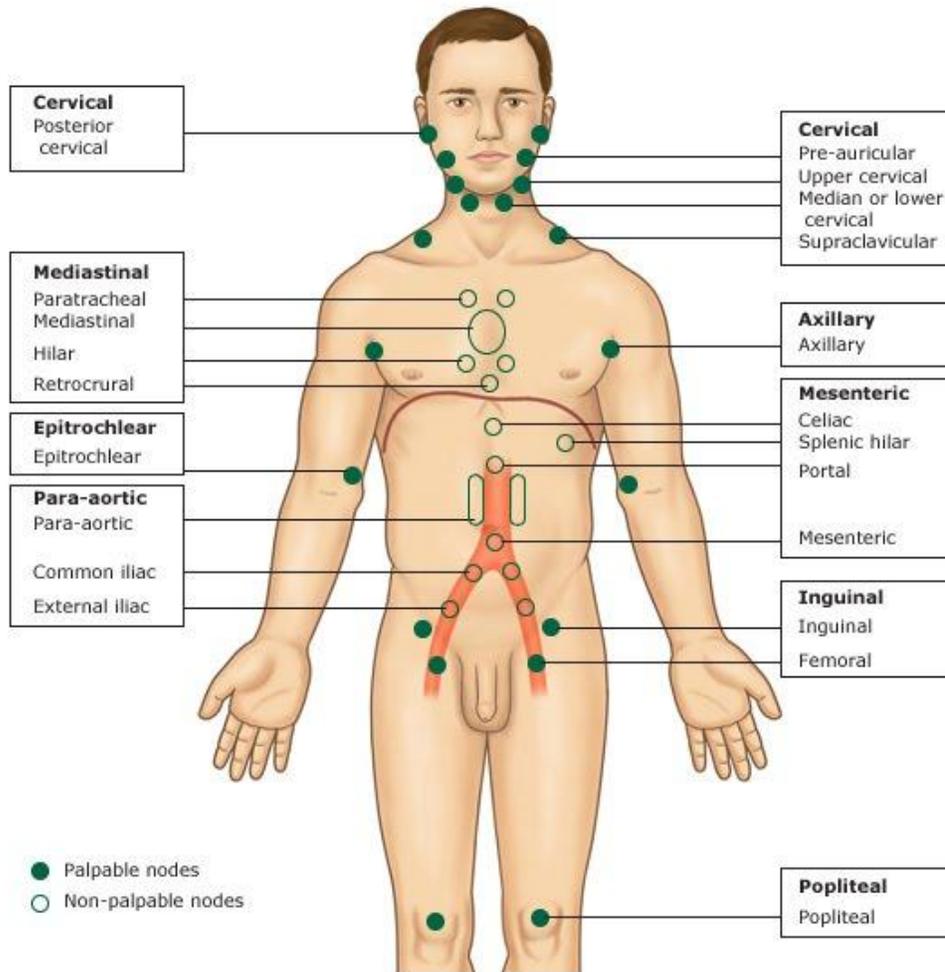


single lymph node region or single extralymphatic site (Ie)	two or more sites, same side of diaphragm or \bar{c} contiguous extralymphatic site (IIe)	both sides of diaphragm or \bar{c} spleen (IIIe) or contiguous extralymphatic site (IIIe)	diffuse involvement of extralymphatic sites \pm nodal disease
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Stage subdivision: A-asymptomatic B-unexplained weight loss >10% in 6m and/or fever and/or night sweats
Extralymphatic = tissue other than lymph nodes, thymus, spleen, Waldeyer's ring, appendix & Peyer's patches

"Lymphoma: Clinical- Hodgkin's Lymphoma." *Pathology Tool*. University of Virginia Medical School. Web. 02 May 2012. <http://www.med-ed.virginia.edu/courses/path/innes/wcd/hodgclinic.cfm>.

Graphic 4.



"Lymphadenopathy." Web log post. *Horses and Zebras*. Morning Report at Toronto General Hospital, 20 July 2010. Web. 2 May 2012. <http://morningreporttgh.blogspot.com/2010/07/lymphadenopathy.html>

Question 11: Did the recipient show any systemic symptoms at diagnosis?

Systemic symptoms, also known as “B” symptoms, are defined as follows:

- unexplained fever > 38° C (> 100.4°F)
- drenching night sweats
- unexplained weight loss of > 10% of body weight over 6 months

Evidence of “B” symptoms is significant because it may indicate the presence of disease in parts of the body not identified using standard testing methods. The presence or absence of “B” symptoms may be indicated in the staging (e.g., II-B or II-A).

If there was no evidence of “B” symptoms at diagnosis, select option 1. If there was evidence of one or more “B” symptoms at the time of diagnosis, select option 2. If “unknown,” select option 3.

Question 12: Did the recipient have any known extranodal or splenic involvement at diagnosis?

Extranodal refers to the presentation of lymphoma outside of the lymph nodes. Common areas of extranodal involvement may include bone, gastrointestinal tract, and skin. Splenic involvement in lymphoma is also common. It is usually evidenced by enlargement of the spleen, or splenomegaly. Splenic or other extranodal involvement is most often detected by imaging techniques or pathological findings.

If extranodal or splenic involvement was identified at diagnosis, indicate “yes” and continue with question 13. If there was no evidence of extranodal or splenic involvement at diagnosis, indicate “no,” and continue with question 27. If extranodal or splenic involvement is unknown at that time of diagnosis, indicate “unknown” and continue with question 27.

Questions 13-26: Specify site(s) of involvement

Answer each question with “yes” or “no.” Do not leave any question unanswered. If “Other site,” specify the site using question 26.

Question 27: LDH at diagnosis

Indicate whether the LDH (lactate dehydrogenase) level is “known” or “not known” at the time of lymphoma diagnosis. If “known,” report the laboratory value and unit of measure documented on the laboratory report.

Question 28: Upper limit of normal for LDH

Indicate the upper limit of normal for LDH at your institution.

Question 29: Enter age-appropriate Karnofsky or Lansky score at diagnosis

The CIBMTR uses the Karnofsky/Lansky scale to determine the functional status of the recipient at time of diagnosis. The Karnofsky Scale is designed for recipients aged 16 years and older, and is not appropriate for children under the age of 16. The Lansky Scale is designed for recipients less than 16 years old.

Recipient performance status is a critical data field that has been determined to be essential for all outcome-based studies. If a Karnofsky/Lansky score is not documented in the source documentation (e.g., inpatient progress note, physician’s clinic note), data management professionals **should not** assign a performance score based on analysis of available documents. Rather, a physician should provide documentation of the performance score.

The CIBMTR recognizes that some transplant centers prefer to assign and use the ECOG performance score as opposed to the Karnofsky/Lansky score. Although the ECOG and Karnofsky/Lansky performance score systems are based on similar principles, the scales are not the same. The Karnofsky/Lansky scale is described in 10 categories, whereas the ECOG performance status is reported in six categories. Due to the overlap between the two systems, an ECOG score of “one” can represent either “80” or “90” on the Karnofsky/Lansky scale; whereas, a Karnofsky/Lansky score of “80” or “90” is converted directly to an ECOG score of “one.” Therefore, the Karnofsky/Lansky scale can be more accurately converted into ECOG.

However, for centers that collect only an ECOG performance score, CIBMTR will make the following accommodations when auditing the source data:

- Centers assigning ECOG scores should do so using standard practices to ensure accuracy.
- For the purposes of CIBMTR reporting, conversion of ECOG to Karnofsky/Lansky should follow a standard and consistent practice to account for the lack of direct mapping. This practice should be clear and reproducible.

Select the appropriate performance scale, Karnofsky or Lansky, based on the recipient’s age. Using this scale, select the score (10-100) that best represents the recipient’s activity status at the time of diagnosis. The only valid scores are 10-100. Zero is not a valid response for this scale, nor are values not ending in zero, such as “85.” The Karnofsky/Lansky scale can be found in [Appendix L](#).

Pre-HSCT Treatment for Non-Hodgkin’s Lymphoma / Hodgkin’s Lymphoma

When submitting the paper version of the form for more than two lines of therapy, copy the “Pre-HSCT Treatment for Non-Hodgkin’s Lymphoma / Hodgkin’s Lymphoma” section and complete a “Line of Therapy” section for each line of therapy administered. The FormsNet™ application allows multiple lines of therapy to be reported. Complete a “Line of Therapy” section for each line of therapy administered prior to the start of the preparative regimen. Examples of therapies given for indolent and aggressive NHL are in Table 4 below.

Table 4.

Therapy for indolent NHL	Therapy for aggressive NHL
Paradoxical in that cure not obtained with conventional therapy	Aggressive therapy with curative intent
Watchful waiting approach with therapy for symptomatic progression	CHOP-based therapy for B-cell neoplasms
Radiation in limited disease	Adjunctive radiation to sites of bulk (defined as > 10 cm in largest diameter*) disease
Chemotherapy	Risk stratification for patients to be considered for BMT in 1 st remission
Biologic therapy (MoAb, IFN)	Biologic therapy (anti-CD20 based therapy)
Hematopoietic cell transplant (allogeneic vs. autologous)	Hyper-CVAD for mantle cell/highly aggressive diseases

*Casciato, Dennis A and Mary Territo. Manual of clinical oncology. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins, 2009.

Question 30: Was therapy given between diagnosis and the start of the preparative regimen?

Indicate if the recipient received treatment for lymphoma between diagnosis and the start of the preparative regimen. If “Yes,” continue with 31. If “No,” continue with 129.

Questions 31 & 80: Chemotherapy

Chemotherapy (i.e., systemic therapy) may be injected into a vein or given orally, and is delivered to the whole body via the blood stream. Below are common examples of chemotherapy lines administered. Also see [Appendix T](#) for specific examples in reporting lymphoma lines of therapy.

Table 5.

COMMON LYMPHOMA CHEMOTHERAPY REGIMENS	
FLAG	Fludarabine
	Cytarabine (Ara-C)
	G-CSF
CHOP	Cyclophosphamide
	Adriamycin
	Vincristine
	Corticosteroids (Prednisone)
ESHAP	Etoposide (VP16)
	Corticosteroids (Methylprednisone)
	Cytarabine (Ara-C)
	Cisplatin

RICE	Rituximab
	Ifosfamide
	Carboplatin
	Etoposide (VP16)
BEAM	BCNU (Carmustine)
	Etoposide
	Ara-C (Cytarabine)
	Melphalan

If chemotherapy was administered pre-HSCT for the treatment of lymphoma, indicate “yes” for question 31 (or 80) and continue with question 32 (or 81). If chemotherapy was not administered pre-HSCT for the treatment of lymphoma, indicate “no,” and continue with question 64 (or 113).

Questions 32 & 81: Date therapy started

Enter the date the recipient began this line of therapy.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Questions 33 & 82: Date therapy stopped

Enter the date the recipient started the last cycle for this line of therapy.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Questions 34 & 83: Number of cycles

Chemotherapy is usually administered in cycles with rest periods between the cycles. This enables cancer cells to be attacked at vulnerable times and provides healthy cells adequate time to recover from the damage. A cycle can last one or more days and may repeat weekly, bi-weekly, monthly, etc. A chemotherapy course may consist of multiple cycles. Enter the number of chemotherapy cycles the recipient received during this line of therapy being reported, or check “unknown/not applicable.”

Questions 35-63 & 84-112: Treatment

Chemotherapy treatments vary based on protocol and in most cases are administered in the outpatient setting. A treatment may consist of a single drug or a combination of drugs. Additionally, the drugs may be administered on one day, over consecutive days, or continuously. Indicate “yes” or “no” for each chemotherapy treatment drug administered for the line of therapy being reported. Do not leave any responses blank. If the recipient received a chemotherapy treatment that is not listed, check “yes” for “other treatment” and specify the treatment in question 63 (or 112). Please report the generic name of the agent and not the brand name.

Questions 64 & 113: Radiation Therapy

Radiation therapy utilizes high-energy radiation to kill cancer cells. For lymphoma, external beam radiation is the type of radiation used most frequently. In this method, a beam of radiation is delivered to a specific part of the body such as the mediastinum. Indicate if the recipient received radiation therapy between the time of diagnosis and the start of the preparative regimen. If “yes,” continue with question 65 (or 114). If “no,” continue with question 70 (or 119).

Question 65 & 114: Date therapy started

Enter the date the recipient started radiation therapy.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Questions 66 & 115: Date therapy stopped

Enter the date the recipient received their last dose of radiation therapy.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Questions 67-69 and 116-118: Sites of radiation therapy treatment

If “other site(s),” specify in question 69 (or 118).

Questions 70 & 119: Surgery

If the recipient underwent surgical treatment pre-HSCT for lymphoma, indicate “yes,” and continue with question 71 (or 120). If the recipient did not undergo surgical treatment for lymphoma prior to HSCT, indicate “no,” and continue with question 75 (or 124).

Questions 71 & 120: Date of surgery

Enter the date the surgery occurred.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Questions 72-74 & 121-123: Sites of surgical treatment

If “other site(s),” specify in question 74 (or 123).

Questions 75 & 124: Was this line of therapy given for stem cell priming?

The release of stem cells from the bone marrow into the peripheral blood is called stem cell priming (i.e., mobilization), Chemotherapy agents (e.g., cyclophosphamide) are often used to stimulate the mobilization of these stem cells for future collection.

Questions 75 and 124 refer to the line of chemotherapy indicated in questions 35-63 and 84-112. Indicate “yes” if the line of therapy was given for stem cell priming. Indicate “no” if the line of therapy was not given for stem cell priming.

Questions 76 & 125: Best Response to Line of Therapy

Indicate the best response to this line of therapy using the definitions shown in Table 6 below. The best response is determined by a disease assessment, such as radiology, pathology, or physician assessment.

Table 6.

Best Response	Definition
Complete remission (CR)	Complete disappearance of all known disease for ≥ 4 weeks
CR undetermined (CRU)	As above, with the exception of persistent scan abnormalities of unknown significance
Partial remission (PR)	$\geq 50\%$ reduction in greatest diameter of all sites of known disease and no new sites
No response / Stable disease (NR / SD)	50% reduction in greatest diameter of all sites of known disease.
Progressive disease (PD)	Increase in the size of known disease or new sites of disease
Not tested / Unknown	No evaluation performed or results unknown

Questions 77 & 126: Date response established

Report the date the best response to this line of therapy was established. Enter the date the sample was collected for pathological evaluation (e.g., bone marrow or lymph node biopsy) or the date of radiological examination (e.g., CT or PET scan). If no pathological or radiological assessment was performed to establish the best response to the line of therapy, report the office visit in which the physician clinically assessed the recipient’s response.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Questions 78 & 127: Did disease relapse/progress following this line of therapy?

Use the table below to determine if relapse or progression occurred following the line of therapy.

Table 7.

Disease Status	Definition
Relapse (Rel)	Recurrence of disease following CR
Progression (PD)	An increase in size of known disease or new sites of disease

Indicate “yes” if relapse or progression occurred following the line of therapy being reported and continue with question 79 (or 128). Indicate “no” if the recipient did not relapse or progress following this line of therapy and continue with question 129.

Questions 79 & 128: Date of relapse/progression

Enter the date the relapse or progression was established following the line of therapy. Enter the date the sample was collected for pathological evaluation (e.g., bone marrow or lymph node biopsy) or the date of radiological examination (e.g., CT or PET scan). If no pathological or radiological assessment was performed to establish relapse or progression, report the office visit in which the physician clinically assessed the recipient’s disease status.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

If more than two lines of therapy were administered between diagnosis and the start of the preparative regimen, continue reporting each line as described at the [beginning of this section](#). Continue to question 129 when all lines of therapy have been reported.

Most Recent Disease Assessment Prior to the Start of the Preparative Regimen

Question 129: Was a PET scan performed at any time between diagnosis and the start of the preparative regimen?

Positron Emission Tomography (PET) is a type of nuclear medicine imaging in which a patient receives a small amount of radioactively labeled sugar. Because cancer cells absorb sugar more avidly than other cells of the body, the radioactively labeled sugar accumulates in these areas and reveals tumors as bright spots. If a PET scan was performed between diagnosis and the start of the preparative regimen, indicate “yes,” and continue with question 130. If a PET scan was not performed between diagnosis and the start of the preparative regimen, indicate “no,” and continue with question 131.

Question 130: Was the PET scan positive for lymphoma involvement at any disease site?

If multiple PET scans were performed between the time of diagnosis and the start of the preparative regimen, use the PET scan results closest to the date of the start of the preparative regimen. Indicate “yes” if the PET scan showed areas of avid uptake consistent with tumor (i.e., lymphoma). Indicate “no” if the PET scan did not show areas of avid uptake consistent with tumor.

Question 131: Did the recipient have known nodal involvement at the time of the pre-HSCT disease status assessment?

Refer to Graphic 4 for identification of nodal areas. Nodal involvement may be assessed by a physician palpating lymph nodes, pathology from a lymph node biopsy, or radiological assessment (e.g., PET or CT imaging). If evidence of nodal involvement is indicated prior to the start of the preparative regimen, select “yes,” and continue with Question 132. If there is no evidence of nodal involvement upon assessment, select “no,” and continue with Question 134.

Question 132: Specify the total number of nodal regions involved

Lymph node regions or groups occur above and below the diaphragm. Nodal regions include cervical (neck), axillary (underarm), mediastinal (thoracic), mesenteric (abdominal), para-aortic (pelvic), inguinal (groin), epitrochlear (inside of arm just above elbow), and popliteal (back of knee). Refer to Graphic 4 for specific nodes within each nodal region. Indicate the total number of nodal regions with evidence of lymphoma involvement.

Question 133: Specify the size of the largest nodal mass

Report the size measured in centimeters of the largest known nodal mass.

Question 134: Did the recipient have known extranodal involvement at the time of the pre-HSCT disease status assessment?

Extranodal refers to the presentation of lymphoma outside of the lymph nodes. Common areas of extranodal involvement may include bone, gastrointestinal tract, and skin. Splenic involvement in lymphoma is also common. It is usually evidenced by enlargement of the spleen, or splenomegaly. Splenic or other extranodal involvement are most often detected utilizing imaging techniques or pathological findings.

If extranodal involvement was identified prior to the start of the preparative regimen, indicate “yes” and complete questions 135-147. If no extranodal involvement was identified, or if evidence of extranodal involvement is unknown prior to the start of the preparative regimen, indicate “no” or “unknown” and continue with question 148.

Questions 135-147: Specify site(s) of extranodal involvement

Answer each question “yes” or “no.” Do not leave any question unanswered. If “Other site,” specify using question 147.

Question 148: Was molecular testing performed at the time of the pre-HSCT disease status determination?

Molecular assessment involves determining whether a molecular marker for the disease exists. Molecular assessment is the most sensitive method of detection, and can indicate known genetic abnormalities (e.g., immunoglobulin (Ig) or T-cell receptor gene rearrangements, or other specific lymphoma gene rearrangements). B- or T-cell lineage assignment can also be identified using molecular assessment. PCR testing is an example of a molecular test method.

If molecular testing was performed at the time of the pre-HSCT disease status determination, indicate “yes” and continue with question 149. If molecular testing was not performed at the time of pre-HSCT disease status determination, indicate “no” and continue with question 151.

Question 149: Specify the date molecular testing was performed

If multiple molecular evaluations were performed between the time of diagnosis and the start of the preparative regimen, report the test date closest to the start of the preparative regimen. If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Question 150: Was disease detected?

If a molecular marker associated with the recipient’s disease was detected at the last evaluation prior to the start of the preparative regimen, indicate “yes.” See Table 8 for common molecular markers associated with different lymphomas.

If no molecular marker associated with the recipient’s disease was identified at the last evaluation prior to the start of the preparative regimen, indicate “no.”

Table 8.

Oncogene	Protein	Translocation	Disease
bcl-1	Cyclin D ₁	t(11;14)	MCL
bcl-2	BCL-2 (antiapoptosis)	t(14;18)	FL, some DLBCL
bcl-3	NF-kB inhibitor	t(11;19)	CLL
myc	Transcription factor	t(8;14)	Burkitt’s NHL
bcl-6	Zinc-finger transcription factor	t(3;14)	DLBCL (some follicular NHL)

National Comprehensive Cancer Network. *Practice Guidelines in Oncology*. v1. 2006.

Question 151: What was the sensitivity of the lymphoma to chemotherapy prior to the preparative regimen?

If multiple lines of chemotherapy were administered prior to HSCT, report the response to the most recent line of chemotherapy. Treatment must be given ≤ 6 months prior to HSCT. If the recipient has not been treated in the six months prior to transplant, “untreated” should be reported even if the recipient has achieved a CR.

Table 9.

Sensitivity to Chemotherapy	Definition	Disease State (see definitions specified in question 152)
Sensitive	$\geq 50\%$ reduction in the bidimensional diameter of all disease sites with no new sites of disease	PIF sen/PR1, CR, CRU, REL sen
Resistant	$< 50\%$ reduction in the diameter of all disease sites or development of new disease sites	PIF res, REL res
Untreated	No chemotherapy was given within 6 months prior to the preparative regimen	disease untreated, REL unt
Unknown	Sensitivity to chemotherapy is unknown	PIF unk, REL unk

Question 152: What was the disease remission state immediately prior to the preparative regimen?

Choose the disease remission state (i.e., disease status) from the list provided. When determining the disease remission state, compare the restaging assessments immediately prior to the preparative regimen to the assessments at baseline. “Baseline” is defined as the disease at diagnosis or at relapse/progression.

Table 10.

Disease Status	Definition
Disease Untreated	The recipient was diagnosed with lymphoma and never treated.
PIF / Partial Remission (PR1)*	<p>Never in complete remission but with stable or progressive disease upon treatment, or never in complete remission but with partial remission upon treatment.</p> <p>(Partial Remission - Reductions of $\geq 50\%$ in the greatest diameter of all sites of known disease and no new sites)</p> <p>Sensitivity to Chemotherapy:* Sensitivity is measured based on the last chemotherapy given within the six months prior to HSCT. Indicate the recipient's sensitivity to chemotherapy using the following guidelines:</p> <ul style="list-style-type: none"> • Sensitive: $\geq 50\%$ reduction in the bi-dimensional diameter of all disease sites with no new sites of disease (PIF sen, PR1) • Resistant: $< 50\%$ reduction in the diameter of all disease sites or development of new disease sites (PIF sen) • Unknown (PIF unk)
Complete Remission (CR1, CR2, CR3+)*	<p>Complete disappearance of all known disease for ≥ 4 weeks. No bone marrow or extramedullary relapse prior to transplant.</p> <p>For the purposes of this manual, the term "confirmed" is defined as a laboratory, pathological, and/or radiographic evaluation showing no evidence of disease.</p> <ul style="list-style-type: none"> • CR1: first complete remission • CR2: second complete remission following relapse • CR3: third or more complete remissions following relapses <p>Do not include PRs when calculating the number of CRs.</p>
CR Undetermined (CRU1, CRU2, CRU3+)*	<p>Complete disappearance of all known disease for ≥ 4 weeks with the exception of persistent scan abnormalities of unknown significance.</p> <p>The term "unconfirmed" is defined as scan abnormalities of unknown significance that are not biopsied or otherwise evaluated.</p> <ul style="list-style-type: none"> • CRU1: first complete remission (undetermined) • CRU2: second complete remission (undetermined) following relapse • CRU3+: third or more complete remissions (undetermined) following relapses <p>Do not include PRs when calculating the number of CRUs.</p>

Disease Status	Definition
Relapse (Rel)	<p>Recurrence of disease after CR.</p> <ul style="list-style-type: none"> • 1st relapse: one prior complete remission • 2nd relapse: two prior complete remissions • 3rd or higher: three or more complete remissions followed by relapse. <p>Do not include PRs when calculating the number of relapses.</p> <p>Sensitivity to Chemotherapy:* Sensitivity is measured based on the last chemotherapy given within the six months prior to HSCT. Indicate the recipient's sensitivity to chemotherapy using the following guidelines:</p> <ul style="list-style-type: none"> • Sensitive: $\geq 50\%$ reduction in the bi-dimensional diameter of all disease sites with no new sites of disease (REL sen) • Resistant: $< 50\%$ reduction in the diameter of all disease sites or development of new disease sites (REL res) • Untreated: No chemotherapy was given within the 6 months prior to the preparative regimen (REL unt) • Unknown (REL unk)

Question 153: Date of the most recent assessment for disease status prior to the preparative regimen

Enter the date of the most recent assessment of disease status prior to the start of the preparative regimen. Report the date imaging took place for the radiographic (CT, MRI, PET, or PET/CT) assessment. Report the date the sample was collected for pathological evaluation (e.g., bone marrow biopsy). If no radiographic or pathologic assessment was performed within one month prior to transplant, report the most recent office visit in which the physician assessed the recipient's disease status.

If the exact date is not known, use the process described for reporting partial or unknown dates in General Instructions, [Guidelines for Completing Forms](#).

Question 154: Signed

The person completing the form must sign the form, print his/her name, and provide a phone number, fax number, and e-mail address where he/she can be reached.