



American  
Clinical Laboratory  
Association

March 1, 2010

Nita Collins  
Palmetto GBA  
J1 Part B Medical Affairs  
P.O. Box 1476  
Augusta, GA 30903-1476

**Re: Comments on the Draft Local Coverage Decision for Flow Cytometry (DL30692)**

Dear Ms. Collins:

The American Clinical Laboratory Association (“ACLA”) is pleased to have this opportunity to submit our comments on the draft local coverage decision (“LCD”) for Flow Cytometry (DL30692) issued by Palmetto GBA (“Palmetto”). ACLA is an association representing clinical laboratories throughout the country, including local, regional, and national laboratories.

As the primary provider of clinical laboratory services across the country, our member companies will be directly impacted by this draft LCD. Overall, we understand Palmetto’s concern about the increasing use of flow cytometry. However, ACLA also believes it is vital to recognize that flow cytometry is a highly sophisticated and important diagnostic tool that is useful for a variety of clinical situations and conditions. As a result, while it may seem convenient to establish a single cut-off, regardless of the circumstances, such a proposal will result in the rejection of certain medically necessary uses of flow cytometry. In the long run, this will mean that laboratories are will be constantly appealing denials, which will be an added expense for the laboratory, and for the contractor that will be required to have medical experts review all such claims. Most importantly, however, this policy could prevent patients who are fighting serious, life-threatening conditions from obtaining appropriate testing if laboratories simply perform the number of markers that they know will be covered. As set out in more detail below, ACLA does have recommendations concerning how to meet the contractor’s concerns without these unfortunate and unfair results.

We have outlined below our concerns relating to the draft coverage policy. Specifically, ACLA’s comments will address the following points: (1) the limitations on the markers for medically necessary testing; (2) the listed ICD-9 diagnosis codes for coverage; and (3) the operational issues of the draft LCD.

## **I. Limitations**

### **A. Limitations for Common Lymphomas and Leukemias**

The “Limitations” section of the draft LCD sets forth limitations relating to the billing of flow cytometry. Namely, the draft LCD states that because “flow cytometry immunophenotypes for most common lymphomas and leukemias are well characterized, Palmetto does not consider it ‘reasonable and necessary’ to perform more than 21 markers in a panel.” However, the draft policy goes on to say that “Palmetto GBA will not pay for more than 10 markers unless the diagnosis is NHL [non-Hodgkin lymphoma] or acute leukemia.” This latter sentence with respect to the limitation of 10 markers is unclear with respect to the 21 marker limitation.<sup>1</sup> Namely, it is unclear as to whether the 10 marker represents a separate limitation for any diagnosis other than NHL or acute leukemia. Based on communications between ACLA and Palmetto’s Medical Director, Dr. Elaine Jeter, it is our understanding that this sentence was included in the draft LCD in error and will be eliminated in the final policy. We believe that is appropriate and, therefore, we are assuming for the purpose of our comments that this sentence will not be included.

However, notwithstanding the removal of the 10 marker limitation language, our primary concern is that a pre-payment edit that limits flow cytometry testing to 21 markers or fewer, fails to account for the fact that more often than not it is medically necessary for a laboratory to test more than 21 markers. Although it may seem like a simple coverage solution to set forth a single number of markers by which to ascertain medically necessary testing, this approach is not feasible for all circumstances involving flow cytometry testing, given the number of circumstances in which such testing can be appropriately used.

#### *1. Panel Selection Should Be Determined by Medical Necessity*

It is generally the case that coverage policies are intended to ensure the provision of medically necessary services. While there are often limitations imposed in coverage decisions, such limitations should ensure that providers can still supply the services that are medically necessary for each patient, without imposing costly or unreasonable burdens. Here, in this draft LCD, the limitation is set at 21 markers. However, while in some instances it may be medically necessary to use 21 markers in other instances it may also be medically necessary to use 27 markers in a panel. In those instances where it is medically necessary to test more than 21 markers, laboratories should not be expected to provide these services without reimbursement or to appeal every denied claim.

This issue of determining the appropriate medically necessary markers to evaluate specimens has been widely published, including by the Bethesda International Consensus in

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<sup>1</sup> Additionally, in the “Utilization Guidelines” section of the draft LCD, there is language that suggests that laboratories should not routinely perform more than 20 analyses per specimen. We assume that this reference to 20 analyses is in error given the limitation of 21 markers, but would like to bring this to your attention as well so it may be corrected in the final policy.

2006.<sup>2</sup> Despite the widespread use of flow cytometry, there is significant variability among the number of markers used for the initial evaluation of various conditions. For example, for hematopoietic neoplasia, according to the Consensus document that was an outgrowth of the Bethesda International Consensus conference, the determination of the panel to be used is based on a number of factors including morphologic evaluation of the specimen, specimen type (*e.g.*, peripheral blood, bone marrow, tissue, etc.), medical indication as documented on the requisition supplied with the specimen, history of prior testing in the laboratory, and clinical history obtained from the requisition, patient's medical record, or verbal discussion with the clinical team. By the same token, the lack of such information will affect the panel selection to be used for testing as well. Expectedly, the more clinical information available to the clinical laboratory, the fewer markers needed for making diagnoses.

To illustrate this point, the Bethesda International Consensus observed that “the use of more extensive reagent panels without morphological or clinical evaluation often occurs where limited information is available, as is often the case in a reference lab environment.”<sup>3</sup> Indeed, often laboratories simply do not receive extensive medical information from the physician. Rather, as a general matter, the laboratory may receive a diagnosis on a requisition asking the laboratory to “rule out anemia” or the requisition may state that the patient is suffering from “fatigue.” From this diagnosis, and based on the test order, the laboratory is expected to rule out anemia or determine why a patient is suffering from fatigue. Based on this information, the laboratory may have to run a comprehensive panel that will in most instances include more than 21 markers. This, however, does not render the additional markers any less medically necessary than the first 21 markers if the laboratory is unable to make a diagnosis based on the initial 21 markers. In fact, one of the basic principles identified by the Bethesda International Consensus was that the “flow cytometric testing performed should be comprehensive enough to identify all major categories of hematopoietic neoplasia relevant to the clinical circumstances, including, but not limited to, the submitted medical indication(s).”<sup>4</sup> Thus, based on the Consensus document, it would often be improper for the laboratory not to perform a broader, more comprehensive panel when performing flow cytometry.

Furthermore, as evidenced by the recommendations made by the Bethesda International Consensus, while the phenotype of a specific disease maybe characterized by 10 or so markers, it typically requires 20 to 24 markers to initially diagnose hematopoietic neoplasia. Blood has a short stability and requires a much larger panel than 10 markers to rule out other closely related diseases. For example, the Bethesda International Consensus recommended addressing myeloid, B cell, T cell, and plasma cell lineages for an initial evaluation of anemia, leukopenia, thrombocytopenia, and pancytopenia, which would require 23 markers.<sup>5</sup> Given that the Bethesda International Consensus document represents the consensus in the medical community, it should be relied on by Palmetto in crafting its LCD.<sup>6</sup>

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<sup>2</sup> Wood BL and Arroz M, et al. 2006 Bethesda International Consensus Recommendations on the Immunophenotypic Analysis of Hematolymphoid Neoplasia by Flow Cytometry: Optimal Reagents and Reporting for the Flow Cytometric Diagnosis of Hematopoietic Neoplasia. *Cytometry B Clin Cytom.* 2007;72 Suppl:S14-S22.

<sup>3</sup> *Id.* at S15.

<sup>4</sup> *Id.*

<sup>5</sup> *Id.* at S18.

<sup>6</sup> According to the CMS Program Integrity Manual, LCDs should be based on, in order of preference, “published authoritative evidence derived from ... definitive studies and [g]eneral acceptance by the medical

In establishing a coverage policy, Palmetto should also consider the tremendous clinical benefits of flow cytometry. Flow cytometry has dramatically modernized our understanding of leukemia and lymphoma as well as a variety of more indolent plasma cell, monocyte, and myeloid disorders. It has led to considerable advancements in therapy, such as the rapid identification of certain types of leukemia or lymphoma requiring more prompt life-saving therapy. Given the significant benefits of flow cytometry, it would be a grave mistake to limit flow cytometry to 10 or 21 markers. Most studies are performed on bone marrow aspirates that take up to an hour to complete with local or general anesthesia. If initial flow cytometry studies are limited to less than 21 markers, patients would be subjected to additional, more frequent bone marrow procedures that are not only arduous and painful for the patient, but costly to the Medicare program.

Finally, it is worth noting that any use of flow cytometry for evaluation of blood, bone marrows, or lymph node tissue for suspected malignancy or other disorders would appropriately fall under the standards of care established for hematopathology, clinical pathology, or hematology, which are recognized board certified subspecialties of pathology and medicine that include training in flow cytometry interpretation. As such, any misuse of such testing would be more appropriately considered under the jurisdiction of medical review boards and consensus recommendations of medical experts in these medical subspecialties rather than in a coverage policy, which specifies a particular number of markers for the use of a technology with such a wide array of diagnostic applications.

## 2. *Limitations Should Also Take Into Account New Technologies*

In addition to the medically necessary reasons to test more than 21 markers, there are also technological advances that should be taken into account for flow cytometry testing. From a technological standpoint, most, if not all, large clinical laboratories use flow cytometers that are capable of six to eight color simultaneous evaluations (*e.g.*, the BD FACSCanto II Flow Cytometer or the Beckman Coulter Gallios Flow Cytometer 8 Colors). Each color in a reagent/sample preparation represents a marker. As such, in the case of flow cytometers capable of six colors, panels with up to five markers plus a control marker in each reagent tube can be performed. This allows for rapid evaluation of short stability samples typically using four to six tubes (each tube containing appropriate controls) minimizing the sample requirements and ensuring that even small volume samples, such as those from children, or pleura fluid, or limited bone marrow aspirates can be evaluated in a timely manner. And, in the case of flow cytometers with eight colors, three runs through the cytometer would allow for panels of 24 markers. Given the capability of these eight color flow cytometers, a limitation of 24 markers is a far more reasonable approach than setting the limitation at 21 markers.

As these reagent combinations are prepared, optimized and validated in advance, limiting the number of markers reimbursed would require them to be separately run or run in smaller combinations or run in separate panels reflexed from a smaller initial panel with various custom

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community (standard of practice), as supported by sound medical evidence based on ...[c]onsensus of expert medical opinion (*i.e.*, *recognized authorities in the field.*)” Program Integrity Manual, Chap. 13, §13.7.1 (emphasis added).

reagent set ups. This results in more preparation and analysis time and more reagent and labor expense per case. This can also compromise the stability (viability) of the sample and require additional volume of sample to perform the analysis. Additionally, most flow cytometry is performed in larger hospitals or regional or national reference laboratories. If all of the needed markers cannot be run within about 24 hours of the draw date, the sample integrity and clinical information can be compromised necessitating repeat analysis and impacting care decisions, which can be urgent for acute leukemias.

### *3. Recommendation*

Given the support from the Bethesda International Consensus and the flow cytometers that are currently in use by laboratories, ACLA strongly recommends that Palmetto remove the 21 marker limitation for medically necessary flow cytometry testing. It is often the case that laboratories will perform medically necessary testing that involves more than 21 markers and, therefore, we encourage Palmetto to establish a numerical marker that serves as guidance to providers performing flow cytometry, as opposed to establishing a pre-payment edit that will be routinely exceeded.

In lieu of the 21 marker limitation, we suggest that 24 markers is a reasonable guidepost for providers. However, Palmetto should make clear in its policy that a panel of more than 24 markers is not, in and of itself, medically unnecessary. Indeed, there are instances where it is medically necessary to test 27 or 30 markers, such as for evaluating leukemias with ambiguous lineages, evaluating plasma cell dyscrasias, such as multiple myeloma, or evaluating bone marrow samples involved by more than one disease, such as chronic lymphocytic leukemia (“CLL”) and myelodysplastic syndrome (“MDS”) with excess blasts. Although these may be uncommon, they are, nevertheless, important to identify and fully characterize for medically necessity reasons.

These examples illustrate that there is no one size fits all approach for flow cytometry testing. In fact, the wide variability in markers used for flow cytometry indicates that such testing does not lend itself to an arbitrary pre-payment edit. However, we recognize the need to ensure that laboratories are not reimbursed for truly medically unnecessary testing. Thus, to the extent that laboratories surpass the 24 marker guidepost, we offer that Palmetto could conduct post-payment audits of those providers to detect unusually high utilization practices. If, instead, Palmetto maintains finalizes the pre-payment edit of 21 markers, there are a number of operational issues that will result, which we have discussed below.

#### **B. Limitation on Mast Cell Diagnosis**

The draft policy sets forth a separate limitation for diagnosing mast cell disease. The policy states that for mast cell diagnosis, “labs performing [flow cytometry] FCM should limit marker selection as appropriate for the identification of mast cells.” Although it is not clear whether or not Palmetto is attempting to limit the number of markers for diagnosing mast cell disease, we strongly encourage Palmetto to remove this limitation from the draft policy. According to the 2008 WHO Classification of Tumors of Haematopoietic and Lymphoid Tissues, “up to 30% of cases with SM [Systemic Mastocytosis], an associated, clonal

haematological, non-mast cell lineage disease (“AHNMD”) are diagnosed before, simultaneously with, or after the diagnosis of SM.”<sup>7</sup>

As such, laboratories need to use more extensive panels for initial diagnoses of mast cell disease as well as mast cell-specific markers to rule out the co-existence of AHNMD with SM. Limitations on diagnosing mast cell diseases may result in missing patients with underlying hemalogic malignancies (*e.g.*, lymphoid malignancy, myeloid malignancies).

## **II. ICD-9 Diagnosis Codes**

The draft LCD lists the ICD-9 diagnosis codes that would be covered for the Current Procedural Terminology (“CPT”) codes to which the policy applies. We have addressed our concerns with respect to those diagnosis codes herein.

### **A. Flow Cytometry**

For the flow cytometry CPT codes, 88184, 88185, 88187, 88188, and 88189, Palmetto lists a number of covered ICD-9 diagnosis codes. We believe this list of ICD-9 diagnosis codes, however, fails to include certain relevant diagnoses that should also be covered. The diagnosis codes that we believe should be included in this coverage policy have been included in active flow cytometry coverage policies for other contractors. We have identified those codes for their inclusion in the final policy and included them in an Addendum to this letter.

### **B. Cell Marker Study**

For the cell marker study (“DNA analysis”) CPT code, 88182, Palmetto provides an abbreviated list of ICD-9 diagnosis codes that appears different from the list of diagnoses codes for flow cytometry. This is problematic because it is often the case that DNA analysis is performed with flow cytometry. In those situations, if a particular ICD-9 diagnosis code is covered for flow cytometry and not for the DNA analysis, CPT code 88182 would be denied. As such, those diagnoses that are medically necessary for flow cytometry should also be medically necessary for DNA analysis.

DNA analysis has been performed by flow cytometry for many years. Only on rare occasions, such as pediatric precursor B-cell acute lymphoblastic leukemias, is its data contributory, and therefore reportable, in peripheral blood samples. However, in tissues and bone marrows, DNA analysis has multiple functions in the upfront examination. With the knowledge that normal lymph nodes and bone marrows are diploid, one function is the detection of aneuploidy that may indicate occult malignancy. Such findings may preclude the morbidity of subsequent surgical intervention, such as thoracotomy or laparotomy. Another function is the grading of lymphomas and non-hematopoietic tumors, when present. Again, this may prove useful in fine needle aspirations when the grading of a neoplasm (*e.g.*, determination of

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<sup>7</sup> H.-P Horny, D.D. Metcalfe, J.M. Bennett, B.J. Bain. “Mastocytosis.” In: WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues, 4<sup>th</sup> Edition. SH Swerdlow, et al (eds). International Agency for Research on Cancer: Lyon, France. 2008. Pages 55-56.

aggressive (large cell) lymphoma, metastatic small cell carcinoma, etc.) precludes the need for additional surgery.

Although DNA analysis may allow for the detection of occult malignancy in tissues, including bone marrows, when it is performed in conjunction with the CD45 antigen density and light scatter property gating strategy used in immunophenotyping, much information may be ascertained on the function of the bone marrow. Each population of cells may be assessed for DNA content and proliferation characteristics. Regenerating marrow may demonstrate increased proliferation of its component cell fractions, such as the erythroid and myeloid populations present. Alterations from the normal may be seen in association with primary marrow processes (myelodysplasia and myeloproliferative disorders). Therefore, as with the phenotypic markers selected, DNA analysis has multiple functions, which justifies its inclusion in the assessment of hematolymphoid tissues and neoplasia.

Accordingly, we have included in an Addendum to this letter a list of ICD-9 diagnoses codes that should be considered medically necessary for DNA analysis in the final policy.

### **III. Operational Issues**

In addition to our concerns with respect to the limitations for flow cytometry, there are a number of operational issues that the draft policy presents that we would like to take this opportunity to address. First, it is important to note that there is a clear distinction between the rules for diagnosis coding for anatomical pathology testing and clinical laboratory testing. Whereas for clinical laboratory testing the laboratory code included on the submitted claim is the code received from the referring physician, for anatomic pathology testing that is not the case, unless the laboratory is unable to render a diagnosis. In instances where the laboratory is unable to render a conclusive diagnosis, the laboratory will use the referring physician's diagnosis. Otherwise, in most instances, the laboratory will submit the claim for anatomical pathology testing with a diagnosis code based on the actual diagnosis rendered by the laboratory's pathologist.<sup>8</sup> However, the draft policy does not seem to take into consideration this important distinction.

Instead, the draft policy seems to be based on the premise that because the laboratory submits a claim with a diagnosis of, for example, leukemia, the laboratory was aware of the diagnosis prior to conducting the testing. This, of course, is not the case. Flow cytometric testing is usually done because the hematologist/oncologist SUSPECTS a possibility of a hematologic malignancy such as lymphoma or leukemia, based on the clinical presentation. The symptoms relative to these hematologic diseases are protean and nonspecific (*e.g.*, fatigue, weight loss, low blood counts, "swollen glands", etc). Thus, as noted above, in more cases than not, the laboratory will receive a requisition that indicates "rule out leukemia" or "fatigue" or some other set of signs and symptoms. As such, the laboratory will often perform a comprehensive panel of medically necessary testing in order to diagnose the patient. In other words, although the laboratory submits a diagnosis with the claim, the contractor has no way of knowing what information the laboratory has at the time the testing is performed.

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<sup>8</sup> Medicare Claims Processing Manual, Chap. 23, § 10.1.1.

Second, and related to the lack of information provided by the physician, it is unclear how Palmetto expects the laboratory to satisfy the documentation requirements proposed in the policy. To the extent that the laboratory conducts testing that exceeds the proposed marker limitation, Palmetto expects to receive the following information: (1) clinical information summary; (2) specific marker results; (3) diagnosis and interpretation; and (4) rationale to support each additional marker. It appears that all such information would have to be submitted in paper format. However, according to the CMS Manual provisions dealing with LCDs, contractors cannot require providers to submit paper claims during medical review.<sup>9</sup> In addition, they cannot require the submission of supporting documentation with the initial claims through local policies or other communications.<sup>10</sup> Furthermore, according to the Manual, such documentation can only be requested through CMS' Additional Documentation Request process, which will be a lengthy and onerous process, especially in the case of laboratory claims.<sup>11</sup>

Furthermore, while the laboratory conducting the testing will be able to provide the supporting documentation and results to justify the testing it performs, the laboratory is rarely in the position to provide any information that would be part of the patient's medical record. As the indirect provider of care, reference laboratories do not maintain medical records for patients, nor are they often able to receive such medical information from the referring physician, even upon request. As a result, it would be nearly impossible for laboratories to comply with the documentation requirements as proposed.

Finally, given that in several instances it is medically necessary to test more than 21 markers the proposed limitation will result in a significant number of appeals. As such, we have recommended a guidepost of 24 markers in lieu of a 21 marker pre-payment edit. To the extent that testing exceeds the recommended 24 markers, Palmetto may elect to conduct post-payment audits to curb unusual instances of high utilization. We have recommended this approach because a pre-payment edit of 21, or even 24, markers would create an onerous situation for not only laboratories, but for Palmetto as well. For every claim that exceeded the pre-payment edit, laboratories would be required to file an appeal. As part of this process, laboratories would need to train and educate their staff to ensure that pathologists were aware of the additional document requirements for billing markers over the pre-payment edit. This, of course would require additional time and resources on the part of the laboratory. In addition, in most instances, laboratories would be forced to obtain from the referring physician, to the extent possible, the required medical information to submit with each claim, which will also impose additional costs on the business operations of the laboratory. Otherwise, the laboratory would risk not being reimbursed for the services provided that exceeded the pre-payment edit.

An increase in claims appeals would be costly for Palmetto as well. For those laboratories that often conduct medically necessary testing based on more than 21 markers, there would be a significant increase in appeals. This would be particularly costly to Palmetto as these appeals would require individual medical reviews. These appeals would require medical professionals to determine medical necessity each time a claim is denied by reviewing the supporting information that is provided. As a result, Palmetto may require additional medical

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<sup>9</sup> Medicare Program Integrity Manual, Chap. 3, § 3.5.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.* at § 3.4.1.2(B).

staff or, alternatively, existing medical reviewers will face increases in their appeals workloads. Thus, we encourage Palmetto to reconsider the use of a pre-payment edit for flow cytometry. Instead, a post-payment audit will permit Palmetto to continue to monitor the utilization of flow cytometry while not setting arbitrary barriers to medically necessary testing.

**IV. Conclusion**

In closing, we appreciate the opportunity to submit our comments on the draft LCD and look forward to working with you. If you have any questions or need any further information, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read 'JoAnne Glisson', with a stylized flourish at the end.

JoAnne Glisson  
Senior Vice President

**ADDENDUM:**

**Missing ICD-9 Diagnosis Codes for Flow Cytometry – CPT Codes 88184, 88185, 88187, 88188, and 88189**

<b>ICD-9</b>	<b>DESCRIPTION</b>	<b>WPS L30161</b>	<b>CIGNA L5956</b>	<b>NGS L27386</b>
238.6	Plasma cells	√		
281.0	Pernicious anemia			√
281.3	Other specified megaloblastic anemia not elsewhere classified			√
281.9	Unspecified deficiency anemia			√
285.3	Antineoplastic chemotherapy induced anemia			√
287.1	Qualitative platelet defects	√		
287.4	Secondary thrombocytopenia		√	
289.81	Primary hypercoagulable state			√
289.89	Other specified diseases of blood & blood-forming organs			√
511.9	Unspecified pleural effusion		√	
789.51	Malignant ascites		√	

\* Note: The “√” indicates the coverage policy in which the particular ICD-9 code is included.

**Missing ICD-9 Diagnosis Codes for Cell Marker Study – CPT Code 88182**

<b>ICD-9 Diagnosis Code</b>	<b>Description</b>
200.40-200.48	Mantle cell lymphoma, unspecified site, extranodal and solid organ sites - mantle cell lymphoma, lymph nodes of multiple sites
200.70-200.78	Large cell lymphoma, unspecified site, extranodal and solid organ sites - large cell lymphoma, lymph nodes of multiple sites
201.90-201.98	Hodgkin's disease unspecified type unspecified site - hodgkin's disease unspecified type involving lymph nodes of multiple sites
202.00-202.08	Nodular lymphoma unspecified site - nodular lymphoma involving lymph nodes of multiple sites
202.10-202.18	Mycosis fungoides unspecified site - mycosis fungoides involving lymph nodes of multiple sites
202.-40-202.48	Leukemic reticuloendotheliosis unspecified site - leukemic reticuloendotheliosis involving lymph nodes of multiple sites
202.80-202.88	Other malignant lymphomas unspecified site - other malignant lymphomas involving lymph nodes of multiple sites
203.00-203.02	Multiple myeloma, without mention of having achieved remission - multiple myeloma, in relapse
203.80-203.82	Other immunoproliferative neoplasms, without mention of having achieved remission - other immunoproliferative neoplasms, in relapse
204.10-204.12	Chronic lymphoid leukemia, without mention of having achieved remission - chronic lymphoid leukemia, in relapse
205.00-205.02	Acute myeloid leukemia, without mention of having achieved remission - acute myeloid leukemia, in relapse
205.10-205.12	Chronic myeloid leukemia, without mention of having achieved remission - chronic myeloid leukemia, in relapse
238.71-238.77	Essential thrombocythemia - post-transplant lymphoproliferative disorder (ptld)
238.79	Other lymphatic and hematopoietic tissues
273.1-273.3	Monoclonal paraproteinemia - macroglobulinemia

<b>ICD-9 Diagnosis Code</b>	<b>Description</b>
284.1-284.2	Pancytopenia - myelophthisis
285.9-285.9	Other specified anemias - anemia unspecified
287.5	Thrombocytopenia unspecified
288.00-299.04	Neutropenia, unspecified - neutropenia due to infection
288.09	Other neutropenia
288.1-288.4	Functional disorders of polymorphonuclear neutrophils - hemophagocytic syndromes
288.50-288.51	Leukocytopenia, unspecified - lymphocytopenia
288.60-288.65	Leukocytosis, unspecified - basophilia
288.8-288.9	Other specified disease of white blood cells - unspecified disease of white blood cells
289.9	Unspecified diseases of blood and blood-forming organs
785.6	Enlargement of lymph nodes