

Care Guidelines: Hematology

As Bellin Health continues to prioritize Population Health as our primary focus, Team-based care across the system provides an incredible opportunity to effectively and efficiently for primary care and specialists to co-manage our patients. This will enable us to achieve our goal of achieving optimal quality improvement of our patients, improving access and experience of care for our patients, while improving the cost effectiveness of our care.

Benign Hematology: Expectations for Primary Care management, and guide to appropriate referrals to Hematology

As team-based care spreads throughout the system, there has been lots of attention spent trying to delineate what expectations are reasonable for primary care providers to be able to do to manage specific conditions or diagnoses. One reason for this is to provide cost effective care for our patients, and the other reason is to make sure our specialists are able to preserve access for patients that need them the most.

This document will outline reasonable expectations for primary care in terms of Benign hematology, in order to allow our Heme/Onc teams to preserve timely access for other patients, such as those with oncologic issues. **They have stressed that they will be happy to see patients whenever they are referred**, but following these recommendations will help.

As with all of our specialty work, it is usually a good idea for NPs and PAs to consult with their supervising physician, or another physician at their location, prior to referral to specialists.

If following these protocols and questions remain, reach out to hematology via the Consultative Expert Line at 920 433 3531 for further advice. This may lead to a decreased need for referrals, and a lower cost of care for our patients.

A note on CBCs: *Technical aspects of running a CBC have evolved. Most of the time, **CBC with auto diff** is acceptable to order, since anomalies are usually picked up with the newer technology. In addition, **Laboratory personnel evaluate the CBC results, and they will refer the slide to the pathologists for review if there are significant abnormalities. For this reason, there is usually no reason for primary care providers to order path reviews of the slide.** Note that this is a change from the previous version of this care guide.*

Anemia

Do initial assessment to determine what type of anemia is present: Microcytic anemia or macrocytic anemia. Further classify as hyperproliferative or hypoproliferative based on reticulocyte count)

- CBC
- Reticulocyte Count (is the marrow trying to correct it or is it a marrow problem?)

Hypoproliferative - If reticulocyte count is low, then the marrow is unable to correct, could be infiltrative (neoplastic), or missing building block missing like B12 or iron.

Hyperproliferative - If reticulocyte count is high, the marrow working fine, but red cells are getting destroyed (hemolysis), or blood loss

Microcytic anemia (MCV <80)

- Obtain Fe, Ferritin, TIBC, retic, CRP
- Evaluate for bleeding source: GYN, GI - treat as appropriate
- If workup negative, trial of Iron such as ferrous sulfate 325 daily for 1 month then check retic count and CBC to see if response (retic count should go up)
- **If no response, refer to Heme/Onc**

Normocytic anemia (MCV 80-100)

- Obtain Ferritin, CRP, CMP
- Serum Protein Electrophoresis to look for plasma cell myeloma (plasma cell myeloma may be associated with normochromic or macrocytic anemia)
- Refer if Hg < 10, and hypoproliferative and normocytic
- Examples: Anemia of chronic disease, acute renal failure, myelodysplastic disorder, infiltrative marrow process, hairy cell leukemia
- **Refer to Heme/Onc if Hg < 10, and hypoproliferative and normocytic**

Macrocytic anemia (MCV>100)

- Obtain B 12, Folate, TSH, retic count,
- Treat as appropriate - If B 12 deficiency, 1000 mcg daily. Recheck CBC and B12 in 1 month
- Thyroid disease, liver disease, alcohol abuse can also cause of macrocytosis, as can myelodysplastic disorder
- **If no response, or if any significant abnormality on differential (markedly increased RDW; presence of nucleated red cells; presence of blasts; presence of promyelocytes, myelocytes, metamyelocytes are findings that may be of interest on CBC with automated differential): refer to Heme/Onc**

Polycythemia (Elevated Hemoglobin)

- Obtain CBC, erythropoietin
- Check for the common underlying conditions - COPD, sleep apnea, smoking
- Treat underlying condition as appropriate, follow
- **Refer if erythropoietin below normal (may indicate polycythemia vera)**

Thrombocytopenia (Platelet count <150 000)

- Obtain Complete Metabolic Panel (liver dysfunction, renal dysfunction) CBC with autodiff
- Platelet Count >30K, repeat in 1-4 weeks depending on how low the count is. Ok to follow if stable and not critical
- **Platelet count < 30K, refer to Heme/Onc**

Thrombocytosis (Platelet count >450,000)

- Obtain ferritin, CMP
- Often an acute phase reactant - evaluate for underlying inflammatory condition. Can be elevated following medical procedures, or trauma
- **Refer to Heme/Onc if thrombocytosis with history of thrombotic event, or persistent elevation without explanation**

Leukopenia (WBC< 3.5)

- Obtain CBC with auto diff. Pay attention to the Absolute Neutrophil Count (ANC) – which is part of CBC with autodiff report
- Repeat in 1-4 weeks depending on level
- **Refer to Heme/Onc if ANC under 500 cells/dl, (due to increased risk of infection), or WBC declining, if other cell line involved, or immature cells**

Leukocytosis (WBC > 20,000) (Most common cause is smoking)

- Obtain CBC with autodiff, looking for abnormal cell lines
- Evaluate for underlying infection. Treat as appropriate, repeat in 3-5 days
- **If WBC remains elevated, or if lymphocyte count is over 5000, or if blasts on the differential, or if there are systemic symptoms such as fever, sweats, weight loss - refer to Heme/Onc**

Elevated Ferritin, possible Hemochromatosis (Most are NOT hemochromatosis - usually an inflammatory or liver or drinking problem - ferritin is an acute phase reactant)

- Obtain Ferritin, transferrin saturation, CMP, CRP
- If transferrin saturation < 50%, and/or Ferritin <800, repeat in 3 months
- If both remain low, the patient does NOT have hemochromatosis - no significant risk of iron overload until ferritin over 1000 for 2 or 3 months
- **If Transferrin saturation >50%, or Ferritin >800, refer to Heme/Onc**

NOTE: If multiple cell line involvement, or if blasts are seen, refer to Heme/Onc. If extremely low Hb (<6 or 7) take appropriate action and follow closely or refer. Use the Consultative Expert Line if there are questions.

Guidelines for referrals back to PCP from specialty:

Most hematologic conditions will require Hematology involvement for a limited time. Once the patient is evaluated, stabilized, and the treatment plan is in place, it may be appropriate to refer back to the PCP for ongoing monitoring:

- Once deemed stable by Heme/Onc, the patient can be referred back to primary care for ongoing follow-up
- Communication will include:
 - Final diagnosis
 - Recommended treatment
 - What tests to follow
 - Frequency of follow-up testing
 - When referral back to Heme/Onc would be appropriate