

Diagnosis of Iron Deficiency Guideline

Quality Metric Assessment Tool

Use this set of metrics to assess quality of care as it relates to the American Society of Hematology (ASH) Clinical Practice Guidelines on the diagnosis of iron deficiency. Results may be used to identify quality gaps and target quality improvement efforts at your institution.

1. Diagnosis of iron deficiency in young children

Recommendation Statement	In children age 9 months to 4 years, the ASH Guideline Panel <i>suggests</i> using a serum ferritin threshold of ≤ 20 ng/ml instead of a threshold of ≤ 12 ng/ml for the diagnosis of iron deficiency.
Denominator Population	Children age 9 months to 4 years
Numerator Metric	Documentation of the diagnosis of iron deficiency and/or treatment of iron deficiency if ferritin ≤ 20 ng/ml regardless of laboratory normal range
Quality Metric 1	% of children age 9 months-4 years with a ferritin ≤ 20 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) evidence of treatment of iron deficiency

Implementation comments

Methods to identify documentation or treatment could include ICD-10 code evaluation, review provider documentation for key words, recommendation for over-the-counter oral iron, and/ prescription of iron supplementation (oral or intravenous).

ICD-10 codes for the diagnosis of iron deficiency include D50.0 (iron deficiency anemia seconda to blood loss, chronic), D50.1 (sideropenic dysphagia, including Kelly-Paterson syndrome and Plummer-Vinson syndrome), D50.8 (other iron deficiency anemias), D50.9 (iron deficien anemia), E61.1 (iron deficiency).

2. Diagnosis of iron deficiency in the general adult population

Recommendation Statement	In the general adult population (excluding menstruating or pregnant individuals), the ASH Guideline Panel <i>suggests</i> using a serum ferritin threshold of ≤ 30 ng/mL instead of ≤ 15 ng/mL for the diagnosis of iron deficiency.
Denominator Population	General adult population (excluding menstruating or pregnant individuals)
Numerator Metric	Documentation of the diagnosis of iron deficiency and/or treatment of iron deficiency if ferritin ≤ 30 ng/ml regardless of laboratory normal range
Quality Metric 2	% of adults (excluding menstruating or pregnant individuals) with a ferritin ≤ 30 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) evidence of treatment of iron deficiency

Remarks

For people with signs or symptoms associated with iron deficiency, or ongoing iron deficiency risk factors, it may be appropriate to use a serum ferritin threshold of ≤ 50 ng/ml to diagnose iron deficiency and guide management decisions.

Implementation comments

Methods to identify documentation or clinical action could include ICD-10 code evaluation, review of provider documentation for key words, recommendation for over-the-counter oral iron, and/or prescription of iron supplementation (oral or intravenous).

ICD-10 codes for the diagnosis of iron deficiency include D50.0 (iron deficiency anemia secondary to blood loss, chronic), D50.1 (sideropenic dysphagia, including Kelly-Paterson syndrome and Plummer-Vinson syndrome), D50.8 (other iron deficiency anemias), D50.9 (iron deficiency anemia), E61.1 (iron deficiency).

3. Diagnosis of iron deficiency in menstruating individuals

Recommendation Statement	In menstruating individuals, the ASH Guideline Panel <i>suggests</i> using a serum ferritin threshold of ≤ 30 ng/ml and <i>suggests against</i> using a serum ferritin threshold of ≤ 15 ng/ml for the diagnosis of iron deficiency.
Denominator Population	Menstruating individuals
Numerator Metric	Documentation of the diagnosis of iron deficiency and/or treatment of iron deficiency if ferritin ≤ 30 ng/ml regardless of laboratory normal range
Quality Metric 3	% of menstruating individuals with a ferritin ≤ 30 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) evidence of treatment for a diagnosis of iron deficiency

Remarks For people with heavy menstrual bleeding, symptoms associated with iron deficiency, additional risk factors for iron deficiency, upcoming surgery, or planning pregnancy, serum ferritin ≤ 50 ng/mL is appropriate to diagnose iron deficiency and guide management decisions.

Implementation comments Methods to identify documentation or clinical action could include ICD-10 code evaluation, review of provider documentation for key words, recommendation for over-the-counter oral iron, and/or prescription of iron supplementation (oral or intravenous).

ICD-10 codes for the diagnosis of iron deficiency include D50.0 (iron deficiency anemia secondary to blood loss, chronic), D50.1 (sideropenic dysphagia, including Kelly-Paterson syndrome and Plummer-Vinson syndrome), D50.8 (other iron deficiency anemias), D50.9 (iron deficiency anemia), E61.1 (iron deficiency).

4. Diagnosis of iron deficiency in pregnant individuals

Recommendation Statement	In pregnant individuals, the ASH Guideline Panel <i>suggests</i> using a serum ferritin threshold of ≤ 30 ng/ml and <i>recommends against</i> using a serum ferritin threshold of < 15 ng/ml for the diagnosis of iron deficiency.
Denominator Population	Pregnant individuals
Numerator Metric	Documentation of the diagnosis of iron deficiency and/or treatment of iron deficiency if ferritin ≤ 30 ng/ml regardless of laboratory normal range
Quality Metric 4	% of pregnant individuals with a ferritin ≤ 30 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) evidence of treatment of a diagnosis of iron deficiency

Remarks

For pregnant individuals with anemia and other iron deficiency risk factors and/or symptoms associated with iron deficiency, a serum ferritin < 50 ng/mL may be appropriate to diagnose iron deficiency and guide management decisions.

Implementation comments

Methods to identify documentation or clinical action could include ICD-10 code evaluation, review of provider documentation for key words, recommendation for over-the-counter oral iron, and/or prescription of iron supplementation (oral or intravenous).

ICD-10 codes for the diagnosis of iron deficiency include D50.0 (iron deficiency anemia secondary to blood loss, chronic), D50.1 (sideropenic dysphagia, including Kelly-Paterson syndrome and Plummer-Vinson syndrome), D50.8 (other iron deficiency anemias), D50.9 (iron deficiency anemia), E61.1 (iron deficiency).

5. Diagnosis of iron deficiency in adults with anemia of inflammation

Recommendation Statement	For adults with anemia of inflammation, the ASH Guideline Panel <i>suggests</i> performing both serum ferritin and transferrin saturation (TSAT) rather than serum ferritin alone to evaluate for iron deficiency.
Denominator Population	Adult at risk for anemia of inflammation* in whom iron testing is performed
Numerator Metric	Laboratory evaluation with both serum ferritin and TSAT
Quality Metric 5	% of adults at risk for anemia of inflammation who had both serum ferritin and TSAT measured

Remarks

Anemia of inflammation is a diagnosis of exclusion and requires additional investigations as directed by clinical history. It may occur in individuals with infectious diseases, cancer, chronic kidney disease, heart failure, rheumatologic disorders and other chronic inflammatory disorders, and various disease states may have different serum ferritin ceiling thresholds in keeping with iron deficiency.

Implementation comments

*Identifying patients with anemia of inflammation at the system level is challenging. Therefore, this metric recommends focusing on a specific high-risk group(s) (e.g., anemia in neoplastic disease [D63.0], anemia in chronic kidney disease [D63]) when evaluating laboratory ordering practices. Monitoring this metric within a defined high-risk population is intended to act as a proxy for assessing laboratory ordering practices in all patients with anemia of inflammation.

Exclusions: Patients with iron overload disorders (e.g., hereditary hemochromatosis)

Instructions for completing the QMAT tool below:

1. Identify your institution and, if relevant, unit.
2. Determine the date range for which you will collect data and enter it into the tool.
3. Collect denominator data for each relevant metric and enter it into the Denominator Population fields.
 - a. If a metric is not relevant to the population that you treat, select "N/A--population not managed" in lieu of entering a denominator. The Numerator and Rate fields will become grayed-out & read-only.
4. Collect numerator data for each metric and enter it into the Numerator Metric fields.
5. The Rate field will automatically calculate as the numerator divided by the denominator entered.
6. Based on the calculated metric rates, determine where you have opportunities for quality improvement, and describe in the "Areas of Opportunity" field. You may wish to include QI targets and potential change strategies.
7. Identify who completed this tool.
8. Share the completed tool with stakeholders at your institution to communicate identified QI opportunities as it relates to iron deficiency diagnosis, and use to inform or prioritize QI initiatives.
9. You may consider repeating this tool after implementing a process change to assess changes in quality of care.



Institution:

Date range of data:

Metric #: Population	Quality Metric	Denominator Population	Numerator Metric	Rate
Quality Metric 1: Young children	% of children age 9 months-4 years with a ferritin ≤ 20 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) treatment of iron deficiency			
Quality Metric 2: General adult	% of adults (excluding menstruating or pregnant individuals) with a ferritin ≤ 30 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) evidence of treatment of iron deficiency			
Quality Metric 3: Menstruating	% of menstruating patients with a ferritin ≤ 30 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) evidence of treatment of iron deficiency			
Quality Metric 4: Pregnant	% of pregnant patients with a ferritin ≤ 30 ng/ml who have either (1) a documented diagnosis of iron deficiency or (2) evidence of treatment of iron deficiency			
Quality Metric 5: Adults with anemia of inflammation	% of adults at risk for anemia of inflammation who had both serum ferritin and TSAT measured within a defined evaluation period			

Identified areas of opportunity:

Completed by: