

## **Iron Deficiency Anemia**

**Urgent Care** 

## Center for Clinical Excellence



CPP-UC Iron Deficiency Anemia Clinical Pathway Published: 12/12/2023; Revised: 12/12/2023

## **Definitions**

**Anemia:** Hemoglobin value below the 2.5% for age and biological gender, as per institutionally established laboratory standards (See table below – the lower end of the range represents the 2.5%)

**Symptomatic Anemia:** presence of one or more of the following symptoms with laboratory confirmed anemia:

- Shortness of breath
- Hypoxemia
- Acute respiratory failure
- Hypotension
- Syncope
- Positive orthostatic vital signs
- Sustained tachycardia
- To meet the definition of symptomatic, tachycardia should be observed in a calm and resting child.
- Age-appropriate values for heart rate should be used in assessment.

Asymptomatic Anemia: No evidence of any of the above noted symptoms

Test Name	Units	Age Range	Normal Range Male	Normal Range Female
Hemoglobin	g/dL	6M to <2Y	10.5-13.5	10.5-13.5
Hemoglobin	g/dL	2Y to <6Y	11.5-13.5	11.5-13.5
Hemoglobin	g/dL	6Y to <12Y	11.5-15.5	11.5-15.5
Hemoglobin	g/dL	12Y to <15Y	12.5-16.4	12.0-16.0
Hemoglobin	g/dL	15Y to <18Y	13.1-16.9	12.0-16.0

## **Risk Factors**

- Excessive ingestion of cow's milk (> 24 oz of milk daily)
- Obesity
- Restrictive diets
- Menorrhagia
- Inflammatory Bowel Disease
- Severe and frequent epistaxis
- Gastrointestinal bleeding

Algorithm

- Tachycardia
- Pallor (evaluate conjunctiva, oral mucosa and nail beds)
- Lethargy
- Poor feeding
- Cardiomegaly
- Tachypnea
- Pica

# **Differential Diagnosis**

- Acute blood loss anemia
- Hemolytic anemia
- Thalassemia
- Viral suppression
- Leukemia
- Lead poisoning
- Renal Disease
- Hypothyroidism

# Laboratory Testing

- All patients with concern for underlying iron deficiency anemia should have:
  - $\circ$  CBC with differential
  - Reticulocyte count
  - Iron with Total Iron Binding Capacity (TIBC)
  - Ferritin
  - o Phosphorous level -- helpful in determining the optimal type of iron infusion
- Soluble transferrin receptor can aid in delineating iron deficiency from anemia of chronic disease/inflammation
- If concerned that a patient may require a PRBC transfusion, obtain type and screen

# Laboratory Results Indicative of IDA

- Hemoglobin (HGB) < 2.5% for age and gender (lower number in range on table below)
- MCV < 80
- Low:
  - o Iron
  - o Transferrin Saturation
  - Ferritin
- High
  - Total Binding Iron Capacity (TIBC)
  - o RDW

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Hemoglobin	g/dL	15Y to <18Y	13.1-16.9	12.0-16.0

# **Iron Supplementation**

### **Oral Iron Supplementation:**

- If patient can swallow pills and is  $\geq$  35 kg:
  - Ferrous sulfate 325 mg (65 mg elemental iron) once per day x 3 months
- If patient cannot swallow pills or are < 35 kg:
  - Fer-in-sol 3 mg/kg of elemental iron once per day x 3 months

or

• Novaferrum liquid (polysaccharide-iron complex) 3 mg/kg (max 100 mg) once per day x 3 months

## **Symptomatic Anemia**

- Shortness of breath
- Sustained tachycardia
- Syncope
- Orthostatic hypotension (fall of systolic BP over 20 mm Hg or fall in diastolic BP over 10 mmHg within 3 minutes of standing)

## References

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## Pathway Team & Process

### **Content Development Team:**

#### Leaders:

Emergency Medicine: David Kling Jr, DO

#### Members:

Urgent Care:

	Lucia Berg, MD
	Jerry Stultz, MD
Hematology & Oncology	/:
	Andrew Picca, DO
	Amanda Jacobson-Kelly, MD
	Vilmarie Rodriguez, MD
Emergency Medicine:	
	Berkeley L. Bennett, MD, MS
Emergency Services:	
	Barb Abdalla, RN, MSN, CPN
	Kelli Mavromatis, RN, BSN, CPEN

### **Clinical Pathways Program:**

Medical Director – Emergency Medicine: Berkeley Bennett, MD, MS Medical Director – Clinical Informatics & Emergency Medicine: Laura Rust, MD, MPH Business & Development Manager: Rekha Voruganti, MBOE, LSSBB Program Coordinators: Tahje Brown, MBA Tara Dinh, BS

#### Clinical Pathway Approved

Medical Director – Associate Chief Quality Officer, Center for Clinical Excellence: Ryan Bode, MD, MBOE

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### **Clinical Pathway Development**

This clinical pathway was developed using the process described in the NCH Clinical Pathway Development Manual Version 6, 2022. Clinical Pathways at Nationwide Children's Hospital (NCH) are standards which provide general guidance to clinicians.
Patient choice, clinician judgment, and other relevant factors in diagnosing and treating patients remain central to the selection of diagnostic tests and therapy. The ordering provider assumes all risks associates with care decisions. NCH assumes no responsibility for any adverse consequences, errors, or omissions that may arise from the use or reliance on these guidelines.
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### For more information about our pathways and program please contact: ClinicalPathways@NationwideChildrens.org

## **Quality Measures**

**Goal:** Appropriate evaluation and treatment of iron deficiency anemia that minimizes inappropriate blood transfusions and facilitates appropriate admissions to an inpatient unit, when indicated.

### **Process Metrics:**

- Pathway visualization
- Utilization of Discharge Smart Set