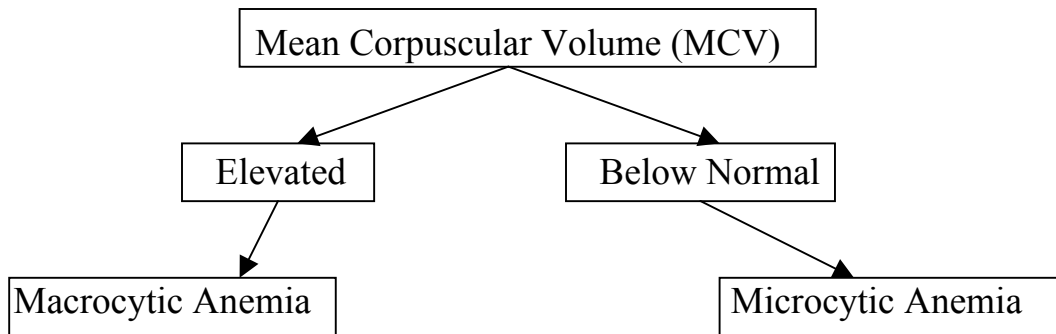


**Duke University Hospital
Durham, NC**

M E M O R A N D U M

To: Dr. Ellis Peters, Chief Resident
From: Dr. Margaret Summers, Chief of Staff
Date: [Insert date here]
Re: Residency Seminar Subject

During recent hospital rounds with the residents, I found the young doctors debating the diagnosis of anemia in a 35-year old male weighing 170 pounds. The point of discussion seemed to be the hemoglobin level of this patient, which was measured by the lab to be 13g/dL (130g/L) [Normal values for adult male = 13-17 g/dL (130-170 g/L)] One of the residents actually said, “How can a man with this hemoglobin level have anemia?” As you and I know, a normal hemoglobin level does not rule out anemia! Therefore, I feel I have uncovered a deficiency in the education of our residents and strongly recommend that the next residency two-hour seminar be devoted to this subject. With this memo, I have attached a list of topics to be reviewed. Please plan this seminar around these topics. One product that should definitely be distributed to all residents is a flow chart illustrating a diagnostic pathway (a series of decisions that help doctors differentiate among the different anemias). A sample excerpt from such a pathway is shown below:



I will look forward to receiving this product, with an overall plan for the seminar from you by [insert a date here that is 5 class periods later]. Please remember that seminars are participatory events, not lectures! Therefore, also include detailed descriptions of the activities you plan for this seminar.

TOPICS TO BE COVERED IN THE RESIDENCY SEMINAR

Review of erythropoiesis

Mechanics of O₂ transport, structure and function of related body systems

Laboratory tests used to diagnose anemia, with normal and abnormal values, including:

- Hemoglobin

- Hematocrit

- MCV ratio

- Bone marrow biopsy

- Peripheral blood smears (complete blood count and cell morphology)

- Total iron binding capacity

- Iron level

- Serum lead concentration

Compare and contrast symptoms and treatment of different types of anemia to include:

- Microcytic anemias such as iron deficiency, thalassemia, chronic inflammation, glucose-6-phosphate dehydrogenase deficiency, and sideroblastic

- Macrocytic anemias such as pernicious anemia, drug-induced, and aplastic

- Sickle-cell anemia

Curriculum Alignment: Anemia Problem

Unit E Skeletal System

- Objective MD05.02 Analyze the functions of the skeletal system
- e. Hemopoiesis

Unit G Hematology

- Objective MD07.01 Explain the structure of the blood
- b. Erythrocytes
- Objective MD07.02 Analyze the function of the blood
- a. Erythrocytes
 1. Transport oxygen and minerals
- Objective MD07.03 Evaluate characteristics and treatment of common blood disorders.
- a. Anemia
 1. Iron-deficiency anemia
 2. Pernicious anemia
 3. Aplastic anemia
 4. Sickle-cell anemia

Unit H Circulatory System

- Objective MD08.03 Analyze circulation and the blood vessels
- a. Pulmonary circulation

Unit J Respiratory System

- Objective MD10.01 Describe the structure of the respiratory system
- b. Lower respiratory tract
 1. Bronchi
 2. Bronchioles
 3. Lungs
 - c. Alveoli
- Objective MD10.02 Analyze the function of the respiratory system
- a. Exchange of oxygen and carbon dioxide
 1. External respiration
 2. Internal respiration

Unit N Nutrition

- Objective MD14.01 Analyze the function of nutrients
- a. Analyze nutrients
 5. Minerals (iron-deficiency)
 5. Vitamin (folic acid, B₁₂ deficiency in pernicious anemia)