**PBL problems used in this study**

**Pre-test (Problem 2)**

Mr. Mahfouz a 67-year-old, retired, when entering bathroom, he slipped on his right thigh, and complain of severe pain in his leg and ambulance holding him to emergency unit. Doctor requested x-ray for him. X-ray revealed right thigh fracture which need fixation. He had a surgical fixation composed of wound incision of 10 sutures in the right thigh. After 2 days of surgery, the patient still complains of severe pain. The surgeon ordered Oxycodone 5 mg every 4 hours PRN for moderate pain and Oxycodone 10 mg every 4 hours PRN for severe pain.

**Learning Objectives:**

1. Define pain.
2. Differentiate between the types of pain.
3. Explain mechanisms of neuropathic pain.
4. Identify pharmacological methods of pain relief.
5. Identify the nonpharmacologic methods of pain relief.
6. Discuss the nursing process for the care of patients with pain.

**Immediate post-test (Problem 7)**

Aliaa 27-year-old female presents with a history of 6 times recurrence sinus infections and 2 episodes of pneumonias over the past 2 years. The last episode of pneumonia required treatment in the hospital with IV antibiotics. She recalls being quite healthy without any infections until 5 years ago. There, patient also has a past history immune thrombocytopenic purpura (ITP). You as a professional nurse how to manage this case?

**Learning objectives:**

1. Define immunodeficiency disorders.
2. Identify types of immunodeficiency disorders.
3. List causes of immunodeficiency disorders.
4. List clinical manifestations of immunodeficiency disorders.
5. List diagnostic studies of immunodeficiency disorders.
6. Identify treatment modalities of the patient with immunodeficiency disorders.
7. Explain nursing management of the patient with immunodeficiency.
8. List potential complications of immunodeficiency disorders.

**Follow-up (Problem 11)**

Miss Fatma is 45-year-old housewife have 4 children and three times abortions she arrived at medical clinical unit, and her main complaint is feeling tired and short of breath, palpitations during and after walking. Past medical history had inflammatory bowel disease and previous hemorrhoidal bleeding. She had done blood analysis since three month that showed serum ferritin 6 ng\ml Hct= 32.9% and MCV=79. and has positive chilling's test. She was started on iron supplement but stopped taking it due to stomach upset. Her physical exam included a colonoscopy that showed diverticulosis and small internal hemorrhoids without bleeding, Wt=81kg, HR=88 b\m, RR=18c\m, BP=132/72mmhg. O2 sat on room air is 99% at rest and 97% with ambulation. Lungs are clear. Heart regular with a soft systolic murmur along the Left Sternal border and she is independent in her ADLs. You as a professional nurse, how to manage this case?

**Learning objectives**

1. Define anemia.
2. Identify different types of anemia.
3. Identify cause of anemia.
4. Identify pathophysiology of anemia.
5. List clinical manifestations for each type of anemia.
6. Illustrate the diagnostic studies of anemia.
7. Mention medical management of each type of anemia.
8. Explain nursing process of anemia.
9. List complications of anemia.