**EVIDENCE BASED CASE STUDY SCENARIOS**

**HEPATIC FAILURE**

Mr MZ, 47-year-male, who was received at EMD after being seen in a rural hospital for severe hypotension, vomiting, and coagulopathy. His history is significant only for hepatitis B virus 10 years prior to this admission. The patient denies tobacco, alcohol, or illicit drug use. Family history includes a father with diabetes, a mother with hypertension, and a sister with breast cancer. He is not on any prescribed medications. He has a college degree and is employed as a journalist. He is admitted to the ICU after going to radiology for a chest x-ray and abdominal ultrasound. The ultrasound revealed an enlarged liver, splenomegaly, and ascites. Lab work showed platelet count 550,000/mm3, Prothrombin time 55.5 sec, PTT 112 sec, alkaline phosphate 184 IU/L, AST 133 IU/L, ALT 76 IU/L, and total bilirubin 10.3 mg/dL.

He was prepared for a paracentesis that was carried out at the bedside. Specimens were sent to the lab for culture and analysis. His abdomen was obese and distended with shifting dullness. He had 3+ pitting edema to the sacrum. Blood cultures and peritoneal fluid showed the presence of *Staphylococcus aureus.* His hospital course was complicated by hypotension requiring vasopressors, sepsis, respiratory failure requiring intubation, and acute renal failure. The patient was managed with Dopamine at 18 mcg/kg/min, multiple antibiotic therapy, mechanical ventilation, and continuous venovenous hemofiltration (CVVH)/ CRRT.

**Evidence based case study questions**

1. How could MZ have gotten hepatitis?
2. What precautions should the nurse take in caring for this patient?
3. Does the patient need isolation precautions?
4. What post-procedure care should be followed after a paracentesis?
5. Which disciplines should be consulted to work with this client?

**HEPATIC COMPLICATIONS**

Mr. SB is a 50 year male with a history of cirrhosis. He had been complaining of feeling weak and a lack of appetite for two weeks prior to his admission. His wife reports that he was turning yellow over the past week. This morning she found him difficult to arouse and confused. He was admitted to the ICU. A pulmonary artery catheter and a urinary catheter were inserted. A pulse oximeter was placed on the patient, and he was connected to the cardiac monitor. The nurse had his admission lab work sent.

The nurse recorded his vital signs as follows: BP 85/45 mm Hg, HR 148/m, RR 22/m, Temp 102o F, and CVP 3 mm Hg. The nurse’s assessment of the patient revealed minimal peripheral edema and clear breath sounds bilaterally, but decreased in the right lower lobe. His respirations were shallow. Fetor hepaticus (foul-smelling breath) was noted. Jaundice and mucosal bleeding were present. The abdominal examination revealed a distended abdomen with hepatomegaly. Bowel sounds were hypoactive. The urinary catheter was draining dark, foamy urine. The patient was confused and uncooperative.

The lab results were as follows: Na 134 mEq/L, K 3.1 mEq/L, BUN 22.4 mg/dL, Creat 1.2 mg/dL, PT 25 sec, aPTT 50 sec, WBC 15,400 mm3, Hgb 10.5 gm/dL, HCT 33.4%, Albumin 2.7 mg/dL, Ammonia 179 mcg/dL, T Bilirubin 4.7 mg/dL, AST 75 IU/L and ALT 136 IU/L

**Evidence based case study questions**

1. Mr. SB precipitating cause of hepatic failure was cirrhosis. List other causes of hepatic failure.
2. Mr. SB has fever and an elevated white blood cell count. Why does he have an increased susceptibility to infection?
3. Which abnormal laboratory and physical findings are indicative of hepatic failure?
4. What precautions should the nurse take in caring for Mr SB?
5. The liver is a dynamic organ with many functions. Discuss the major functions of the liver.

**INTRODUCTION TO EVIDENCE-BASED CASE STUDY**

1. **Evidence-Based Practice**
   1. What is evidence-based nursing practice?
      1. "Evidence-Based Nursing is the process by which nurses make clinical decisions using the best available research evidence, their clinical expertise and patient preferences."
         1. [Source: [University of Minnesota Evidence Based Nursing](http://evidence.ahc.umn.edu/ebn.htm) page]
      2. Magnet hospitals: research and evidence-based practice mandates -- "Quality patient care is provided through sustaining excellence in nursing services."
      3. Solves problems encountered by nurses by carrying out four steps below:
   2. EBP is a 4 step process:
      * Clearly identify the issue or problem based on accurate analysis of current nursing knowledge and practice
        + Define your search question
          - Flemming, K. [Asking Answerable Questions](http://ebn.bmjjournals.com/cgi/content/full/1/2/36). Evid Based Nurs 1998; 1:36-37.
      * Search the literature for relevant research
        + Select appropriate resources: Google Scholar, CINAHL, PubMed, Proquest, Springer, Sage, Lippincott, others
        + Design search strategy that optimizes value of selected databases and their features
        + Use thesaurus terms whenever possible
        + Select limits
        + Review results; modify
      * Evaluate the research evidence using established criteria regarding scientific merit
        + Criteria for critical appraisal of qualitative students (under qualitative EB Nursing
          - [Source: [University of Minnesota Evidence Based Nursing](http://evidence.ahc.umn.edu/ebn.htm) page]
      * Choose interventions and justify the selection with the most valid evidence
   * Key formats for EBP:
     + Original research
       - Individual studies
     + Evidence summaries
       - Systematic reviews: integrative reviews; meta-analysis
     + Translation literature
       - Care Plans
       - Clinical Innovations
       - Critical Path
       - Practice guidelines
       - Protocols
       - Standards
2. **Examples of evidence based nursing practice** 
   1. Joanna Griggs Institute, <http://www.joannabriggs.edu.au/>
   2. McGill University Health Centre, Nursing Research, <http://www.muhc-ebn.mcgill.ca/>
   3. UNC, Health Sciences Library, <http://www.hsl.unc.edu/Services/Tutorials/EBN/index.htm>
   4. University of Minnesota, Evidence Based Nursing, <http://evidence.ahc.umn.edu/ebn.htm>
   5. University of York, Centre for Evidence-Based Nursing, <http://www.york.ac.uk/healthsciences/centres/evidence/cebn.htm>
   6. Cochrane database: [www.cochrane.org](http://www.cochrane.org)
   7. [www.nursingsociety.org](http://www.nursingsociety.org)
   8. [www.guidelines.gov](http://www.guidelines.gov)
3. **After reviewing the evidence based nursing literature, prepare the evidence based case study: Example is cited here.**
4. Introduction: describing the clinical question or problem, including the PICO formatted question. Purpose/aim/goal is clearly stated
5. Evidence based nursing literature: summarizing the research articles addressing the problem. Current evidence related to the clinical problem is succinctly presented. Summarizes the evidence findings, making clear the relationship between the findings and the clinical question. Methods/procedures for implementation are clearly stated. Concise analysis of data collection and relevant information are provided with results in a sequential/logical manner.
6. Conclusion: addressing your recommendations for change in practice. After reviewing the literature, what change (if any) in current practice should occur, or should current practice standards continue? Recommendations/outcomes/findings are highlighted in manner appropriate for practice based on the evidence are made clear