ACID - BASE INTERPRETATION

OBJECTIVES:

KNOWLEDGE
The student should know and understand
1) The effect of normal metabolic processes on blood pH.
2) The normal homeostatic mechanisms which maintain pH in the normal range.
3) The Henderson-Hesselbach equation.
4) The effect on pH of:
   a) metabolic acidosis
   b) metabolic alkalosis
   c) respiratory acidosis
   d) metabolic alkalosis
5) The major causes of the four abnormalities listed in (4)
6) The renal and/or respiratory adaptation to the abnormalities listed in (4)
7) The significance of the plasma anion gap.

CLINICAL SKILLS:
1) The student should be able to take the appropriate history in a patient with a known acid-base disturbance. Specifically, the student should be able to look at and interpret the abnormality and then tailor the history to look for possible causes of the abnormality. An example would be the search for causes of an increased-anion-gap metabolic acidosis, which would include questions about the presence of CHF, DM, infection, volume depletion, etc.
2) The student should be able to make a prediction about a patient's acid-base status after taking a thorough history. For example, the student should be able to predict possible disturbances in a patient with COPD and known CO2 retention, or a diabetic patient with pneumonia.
3) The student should develop a systematic approach to the analysis of an acid-base problem. (This will be covered in the lecture).

PROCEDURAL SKILLS:
1) The student should be able to perform an arterial puncture for the determination of an arterial blood gas.
2) Proficiency with venipuncture is assumed.

PROFESSIONAL BEHAVIOR:
There are no specific items for this topic.