Overcoming Analysis Paralysis: Laboratory and Diagnostic Test Interpretation

Course Description

What is the significance of an elevated mean corpuscular volume (MCV)? What does an elevated blood urea nitrogen (BUN) level with a normal creatinine level indicate? What is the diagnostic difference between ST depression and ST elevation? How does pregnancy affect fibrinogen or platelet levels?

This seminar will look at the answers to these and many other questions regarding laboratory and diagnostic tests. Participants will learn the significance of both the normal findings of numerous commonly ordered laboratory tests as well as the implications of various abnormalities. The course is loaded with case studies to bring laboratory abnormalities to life. Content will cover everything from hematology to chemistry studies, liver function tests to kidney function tests, as well as topics such as interpreting the urinalysis, the electrocardiogram and the chest X-ray. The effects of factors such as age and pregnancy will also be considered. This seminar is meant to enhance the practice of healthcare workers in all clinical areas, from critical care to medical-surgical, surgical services to rehabilitation services.

Program Learning Outcomes

This program prepares the learner to:

- Review four case studies with multiple laboratory results, and identify the significance of both normal and abnormal laboratory results in each case study.
- Identify abnormalities in chest X-rays presented during the seminar.
- Identify abnormalities in 2-Lead and 12-Lead electrocardiograms presented during the seminar, and identify the significance of those abnormalities.

Agenda

Sign-in begins at 7:30 am. Each day includes a one-hour lunch (on your own), as well as a morning and afternoon break of 15 minutes each. The order of lectures presented and break times may vary according to speaker preference.

Day 1, 8:00 am to 4:30 pm

Overcoming Analysis Paralysis: An Introduction to Laboratory Tests
Test Reliability | Reference Values | Critical Values | Phlebotomy

Untangling the Alphabet Soup of Hematological Studies
Blood Basics | Red Blood Cells | Hematocrit | Hemoglobin | Erythrocyte Indices | Anemia Case Study | Reticulocyte Count | Erythrocyte Sedimentation Rate | White Blood Cells | Hematology Case Study

The Positives and Negatives of Electrolyte Studies
Extracellular Electrolytes | Intracellular Electrolytes | Electrolyte Neutrality | Anion Gap | Overview of Cellular Membrane Activity | Serum Sodium | Serum Potassium | Serum Chloride | Calcium | Phosphorus

Lunch 12:00 pm to 1:00 pm

Minding Your "Pees" and "Q's": Renal Function Tests
BUN | Creatinine | BUN to Creatinine Ration | Creatinine Clearance Test | Osmolality | Urinalysis | Renal Failure

More Alphabet Soup: Liver Function Tests
Alkaline Phosphate (ALP) | Gamma-Glutamyl Transpeptidase (GGT) | Alanine Aminotransferase (ALT) | Aspartate Aminotransferase (AST) | Summary Points and Memory Tips for Liver Function Tests | Serum Ammonia | Bilirubin | Albumin | Amylase and Lipase

Plugging Up the Mysteries of Coagulation Studies
The Clotting Process | Disseminated Intravascular Coagulation (DIC)

CSI: Culture and Sensitivity Investigation
Microbiology Overview | Culture and Sensitivity | Specimen Collecting Tips and Practical Application

Agenda

Day 2, 8:00 am to 4:30 pm

Arterial Blood Gas Interpretation for the ABG Challenged
Buffering of the Blood pH | Respiratory Acidosis | Respiratory Alkalosis | Metabolic Acidosis | Metabolic Alkalosis | Interpreting the Values with the H Method

It's All Shades of Gray to Me: Interpreting the Chest X-Ray
Chest Anatomy | Radiographic Imaging | Common Language for CXR | Standardized Approach

Testing Through the Ages
Pregnancy-Related Hormones | Urine Pregnancy Test | Serum Pregnancy Test | Normal Lab Variances, Blood Gases, Blood Glucose During Pregnancy | Gestational Diabetes | ABGs in Pregnancy | Geriatric Considerations

Cardiovascular Studies
Risk Factors | Cholesterol | C-Reactive Protein | Cardiac Enzymes | Natriuretic Peptides

Case Studies: Group Work

Lunch 12:00 pm to 1:00 pm

Squiggles and Squawks: Interpreting the 2- and 12-Lead ECG
Background of Electrophysiology | Interpretation in 5 Steps | Specific Rhythms | Practice Strips and Application

Review of Case Studies

Accreditation

RN/LPN/LVN/Other: 14 Contact Hours

MED-ED, Inc is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

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If your profession is not listed, we suggest contacting your board to determine your continuing education requirements and ask about reciprocal approval. Many boards will approve this seminar based on the accreditation of the boards listed here.