

12-Lead ECG Interpretation for Clinical Practice: Essential and Advanced Skills



Course Description

Essentials Skills is an introduction to the 12-Lead electrocardiogram (ECG) and begins with the fundamentals of electrocardiography with emphasis on how leads record electrical activity, which leads face each part of the heart, and how each of the 12-Leads should look in a normal heart. Normal and abnormal waveforms reviewed. Additional content includes calculation of the QRS axis and what axis deviation can mean clinically; recognition of right and left bundle branch blocks; and recognition of myocardial ischemia, injury and infarction.

Advanced Skills goes beyond the basic 12-Lead ECG interpretation class and takes your ECG interpretation skills to a higher level. We begin with a review of some ECG basics, then move to the more advanced content that includes recognition of fascicular blocks, bifascicular blocks and trifascicular blocks and the potential dangers associated with them; ECG signs of atrial and ventricular chamber enlargement; ECG effects of drugs and electrolyte disorders; myocardial infarction mimics, such as left bundle branch block, ventricular paced rhythms, early repolarization, acute cor pulmonale; and differential diagnosis of wide QRS tachycardias.

Practice ECGs are used throughout both days to help the learner apply content presented in class. It is recommended that participants have arrhythmia interpretation skills prior to taking this class.

If you have an interesting or challenging ECG, email it along with a bit of patient history to EKG@MedEdSeminars.net or fax it to 704-333-5020 and we will discuss it at the end of the day.

Program Learning Outcomes

This program prepares the learner to:

Essential Skills

- Identify a normal 12-Lead ECG.
- Demonstrate the ability to calculate the QRS axis on selected ECGs.
- Identify right and left bundle branch block.
- Recognize STEMI on selected 12-Lead ECGs.
- Recognize signs of ischemia and NSTEMI on selected 12-Lead ECGs.

Advanced Skills

- Recognize the presence of left anterior fascicular block, left posterior fascicular block, bifascicular blocks and trifascicular blocks on selected 12-Lead ECGs.
- Differentiate between right and left atrial enlargement, and right and left ventricular enlargement on selected 12-Lead ECGs.
- Recognize ECG changes that could indicate drug effect or electrolyte imbalances (hypo- and hyperkalemia, hypo- and hypercalcemia).
- Differentiate ECG changes due to myocardial injury and infarction from conditions that can mimic injury and infarction, such as left bundle branch block, ventricular paced rhythm, early repolarization and acute cor pulmonale.
- Differentiate supraventricular tachycardia with aberrant conduction from ventricular tachycardia using ECG clues and clinical criteria.

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 4:00 pm

Essential Skills

- 0800 **Anatomy of a 12-Lead ECG and Waveform Review**
Limb Leads | Precordial Chest Leads | Normal and Abnormal Waveforms
- 0930 **Break**
- 0945 **Normal Ventricular Depolarization and Axis Calculation**
Definition of QRS Axis | Causes of Axis Deviation | Methods of Axis Calculation
- 1045 **Bundle Branch Blocks**
Right Bundle Branch Block | Left Bundle Branch Block | V₁ and V₆ Morphologies
- 1200 **Lunch**
- 1300 **Myocardial Ischemia, Injury, Infarction: STEMI and NSTEMI**
Coronary Circulation | ECG Changes of Injury and Infarction | Locating STEMI on the ECG | ECG Changes of Ischemia or NSTEMI
- 1430 **Break**
- 1445 **ECG Practice**
Practice Tracings
- 1600 **Adjourn**

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

Advanced Skills

- 0800 **Review of ECG Interpretation Basics**
Which Leads Look Where? | Quick Axis Determination | Review of ECG Signs of Ischemia, Injury, Infarction | Review of Bundle Branch Blocks
- 0830 **Fascicular Blocks: Bifascicular Block, Trifascicular Block**
Definitions | ECG Recognition | Clinical Significance of Fascicular Blocks
- 0945 **Break**
- 1000 **Atrial and Ventricular Hypertrophy**
ECGs of Right and Left Atrial Enlargement | ECG Signs of Left and Right Ventricular Hypertrophy
- 1100 **ECG Effects of Drugs and Electrolyte Imbalances**
QT Interval Prolongation | ECG Changes of Hyperkalemia, Hypokalemia, Hypercalcemia, Hypocalcemia
- 1200 **Lunch**
- 1300 **Infarction Mimics**
LBBB | Ventricular Paced Rhythm | Early Repolarization | Acute Cor Pulmonale
- 1400 **Differential Diagnosis of Wide QRS Tachycardias**
Definitions | Mechanisms of Aberration
- 1445 **Break**

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- 1500 **Differential Diagnosis of Wide QRS Tachycardias (cont.)**
ECG Criteria for Differentiating between Aberrancy and Ventricular Ectopic Rhythms | Atrial Recordings | Clinical Criteria
- 1545 **Practice Tracings**
- 1630 **Adjourn**

Accreditation

RN/LPN: 13.5 Contact Hours

CRNA: 13 CE Credits

RT: 13.5 Category 1 CRCE Hours

Med-Ed, Inc. is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This program is also approved by the American Association of Nurse Anesthetists (**AANA**) and the American Association of Respiratory Care (**AARC**).

Med-Ed, Inc. is an approved provider by the following State Boards of Nursing: **Florida/FBN 3215, Iowa/296, California #CEP10453.**

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.

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