EKG Interpretation System

An EKG tracing is so much more than a simple collection of wavy lines. With proper training and experience, EKG technicians can feel confident that they have checked for all conditions and not missed or misinterpreted any critical findings. A systematic approach to EKG interpretation provides the best assurance of getting the most information from each tracing, and a system that is both repeatable and thorough will decrease the prospect of making potentially critical errors. Apply these steps to all types of EKG tracings.

- **Basics**
  - Does the patient’s name and DOB match the information on the EKG?
  - What is the patient’s age and sex?
  - Does the EKG have good technical quality—lead placement, skin prep, calibration, no artifacts?
  - How does the EKG compare to any prior EKGs from this patient?

- **Rhythm**
  - Is the rhythm regular or irregular?
  - Can you see atrial activity?
  - Is there a P-QRS relationship?

- **Rate**
  - Calculate the heart rate using sequencing or 6-second strip method.
  - Is the rate normal, 60–100 bpm?
  - Is the rate bradycardic, < 60 bpm?
  - Is the rate tachycardic, > 100 bpm?

- **P-wave**
  - Is the P-wave upright in lead II?
  - Is the P-wave negative in lead V1?

- **PR, QRS, QT Intervals**
  - Is the PR interval 0.12–0.20 seconds? If not, is it prolonged or shortened?
  - Is the QRS complex ≤ 0.10 seconds, or is it wider?
  - Is the corrected QT interval normal?

- **QRS, ST-T Changes**
  - Is a Q-wave present?
  - Is the Q-wave normal (< 0.04 seconds wide and < 1/3 the height of the QRS complex)?
  - If abnormal (pathologic) Q-waves are present, in which anatomical distribution?
  - Is the QRS complex amplitude normal or increased?
  - Do you see evidence of left ventricular hypertrophy?
  - Is the ST segment elevated, depressed, or isoelectric? Does the ST segment indicate ischemia or injury?
  - Is the T-wave upright or inverted?

- **Abnormal Patterns**
  - Do you see any evidence of arrhythmias?
  - Do you see any evidence of ischemia or myocardial infarction?
  - Do you see any evidence of conduction disturbances?