Apex Innovations®
Improving Outcomes Through Education

imPULSE 3.0

Chest Pain Competency Series

Course Description and Outline

Contents

Level I - Cardiac A&P

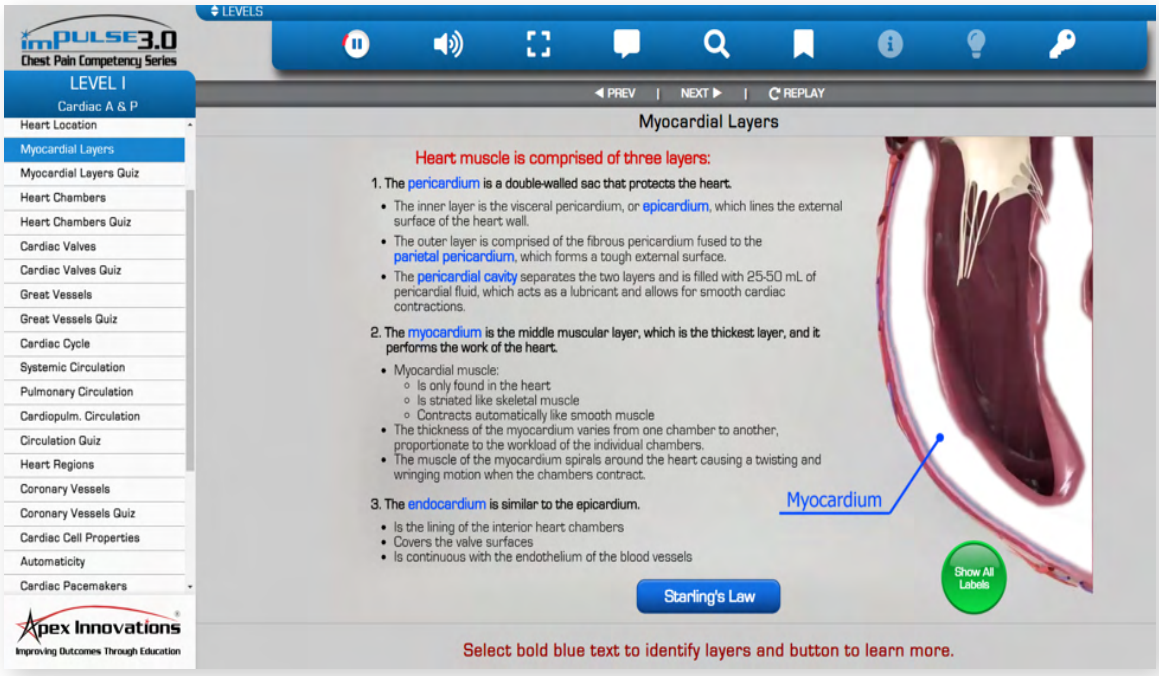
Course Description

Level I of imPULSE 3.0 brings cardiac anatomy and physiology to life by providing you with a clear, concentrated review of heart function. This educational experience presents anatomical structures and functions of the heart with interactive 3D graphics and easy to understand, supporting information. Learn cardiac physiology, including the cardiac cycle, circulation, conduction, and intrinsic pacemakers with the ability to see it in action. Build and examine the normal cardiac waveform while understanding it in relation to cardiac physiology. Engaging visuals, dynamic quizzing, and interactivity used throughout the program will help you to learn more effectively and retain new information quickly!

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Recognize anatomical structures of the heart.
2. Explain the physiology of the heart including its structures, tissues, and cell functions.
3. Describe the cardiac cycle, heart regions, and cardiopulmonary circulation.
4. Identify the intrinsic pacemakers of the heart and its influence on heart rate.
5. Relate the physiology of cardiac conduction to the components of the normal ECG waveform.



Level II – Obtaining the ECG

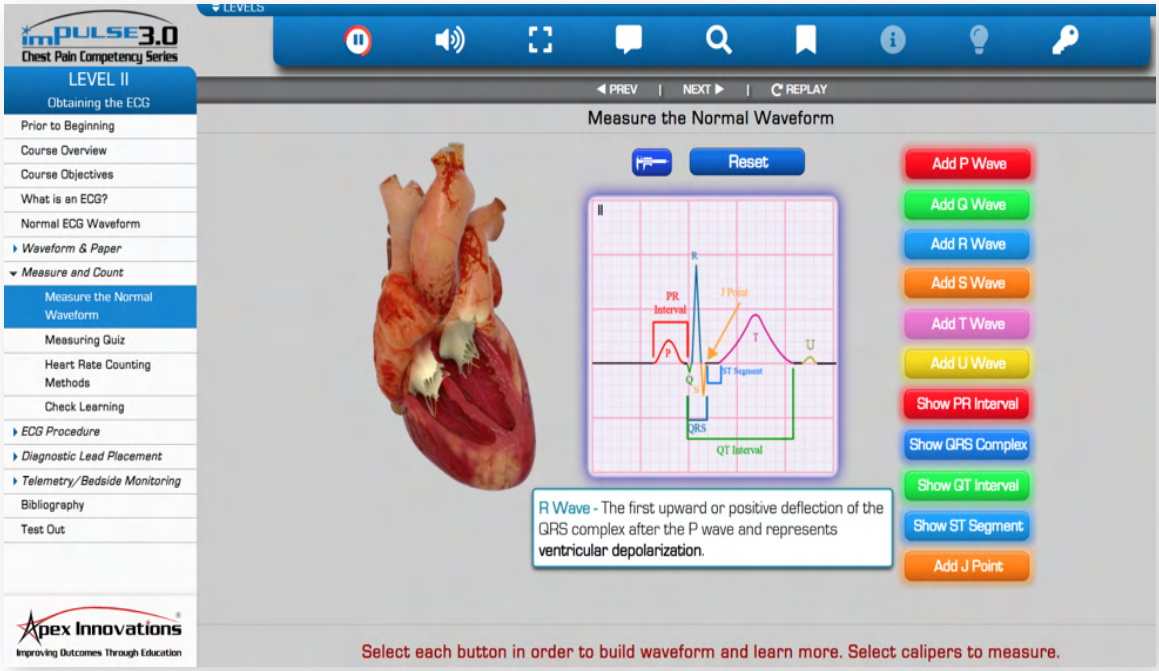
Course Description

Level II of imPULSE 3.0 is a comprehensive review of electrocardiograms starting with how an ECG is captured. In this learning experience, recall waveform and paper basics, counting methods, and waveform measuring. View anatomical landmarks, select and prep electrode sites, and interactively place leads based on current guidelines. Learn proper lead placement for diagnostic 12, 15, and 18-lead ECGs and 3, 5, and 6-lead bedside/telemetry monitoring. Understand the importance of accurate lead placement and how to competently intervene in various ECG capture and interference issues. Assess your progress as you work through the activity to reinforce knowledge and ensure confidence and competency.

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Relate normal cardiac waveform components to anatomy and physiology.
2. Recall ECG paper basics and methods of rate calculation.
3. Describe the procedure for obtaining an ECG with correct electrode placement.
4. Differentiate between diagnostic and bedside (telemetry) ECG options.
5. Recognize issues that may affect the ECG, such as human error and interference, and identify how to correct them.



Level III – ECG Rhythms

Course Description

Level III of imPULSE 3.0 provides an in-depth view of cardiac rhythms. This learning experience begins with basic conduction and continues with the presentation of cardiac rhythms based on their location of origination and specific characteristics. Learn a systematic method to review ECGs for improved understanding and rapid rhythm recognition. Utilize floating calipers to examine the nuances of each rhythm, and view valuable references, including possible causes, rhythm triage, and links to guidelines. The course provides you with periodic quizzes to reinforce rhythm recognition in a practice setting to ultimately improve knowledge!

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Recognize cardiac rhythms based on various types and locations of electrical stimulation.
2. Relate the physiology of cardiac conduction to various cardiac rhythms.
3. Interpret each component of the ECG waveform systematically.
4. Identify arrhythmias based on rate, appearance, and nuances.

Level IV – 12-Lead ECGs

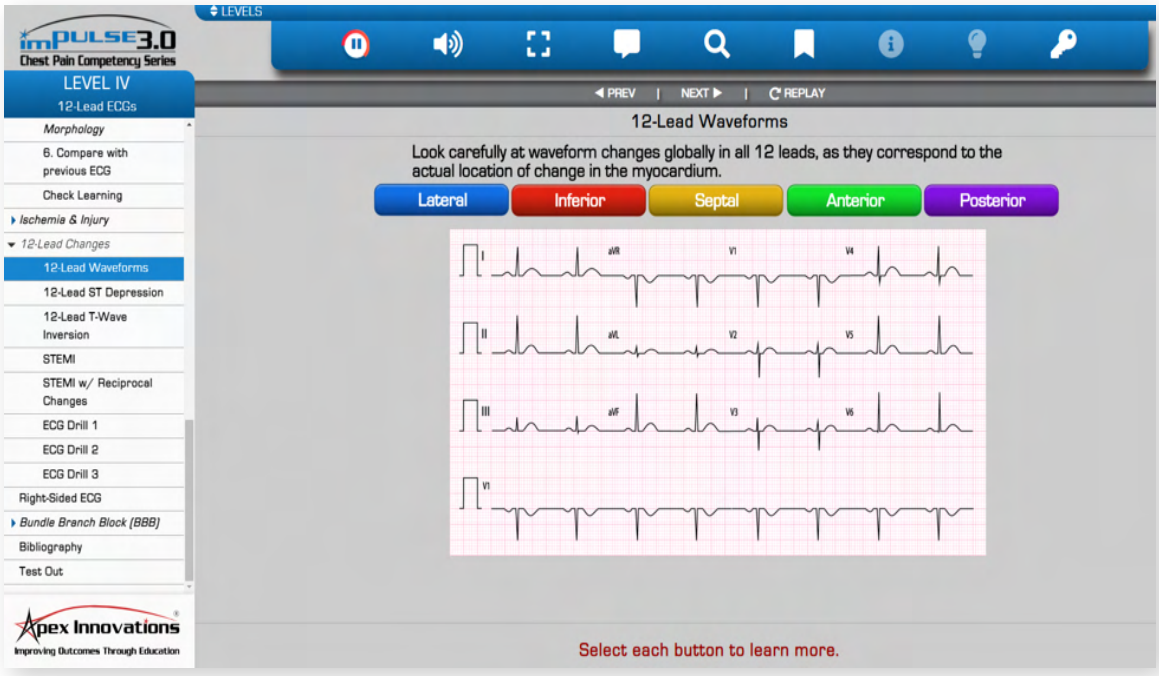
Course Description

Level IV of imPULSE 3.0 takes the mystery out of the 12-lead ECG. In this interactive experience, learn a systematic method for interpretation of the 12-lead ECG to give you increased confidence in your evaluation skills. Learn about normal layout, axis, deflection, and R-wave progression. Recognize ST-segment changes, including STEMI in the presence of bundle branch blocks. Zoom in on areas of cardiac ischemia and injury, as reflected on the 12-lead ECG, using the dynamic interface. Intelligent interactivity and practice quizzes are used throughout the course to enhance your learning, reinforce presented information, and allow you to assess your new knowledge.

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Summarize indications, normal layout, and capture of a 12-lead ECG.
2. Identify vectors, axis, deflection, and R-wave progression.
3. Apply a systematic approach for 12-lead ECG interpretation.
4. Recognize 12-lead waveform changes in relation to ischemia and injury.
5. Distinguish between old and new myocardial infarction.



Level V – Acute Coronary Syndrome

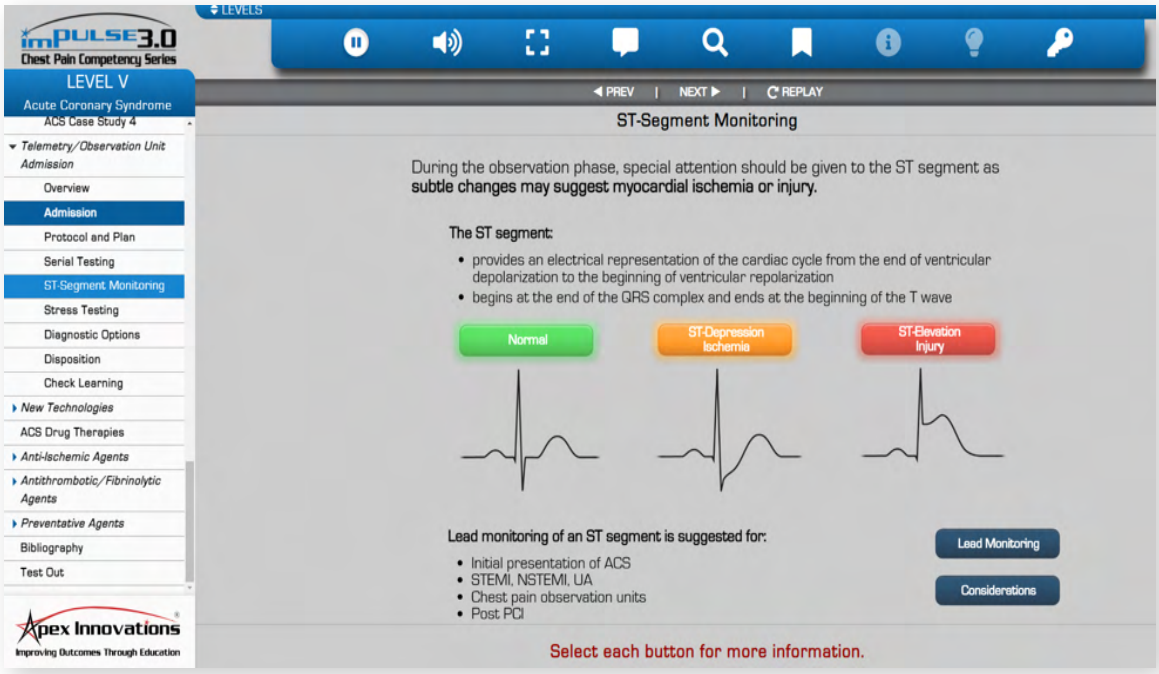
Course Description

Level V of imPULSE 3.0 raises awareness of the standards of care for patients with acute coronary syndrome (ACS). This educational experience reviews pathophysiology, risk factors, symptom presentation, the triage process, and current ACC/AHA treatment guidelines. Learn the importance of subtle waveform changes in the 12-lead ECG, including waveform progression, ST-segment monitoring, and the differences between old and new MI. Understand the use of cardiac troponin, reperfusion strategies, and time goals related to ACS care. Assess your ability to recognize ST elevation in the provided ACS case studies. Early symptom recognition, along with rapid diagnosis and treatment, are critical skills for emergency professionals to provide expert care and optimal outcomes for ACS patients.

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Recognize risk factors associated with the pathophysiology of ACS and prevention strategies.
2. Differentiate between typical and atypical symptoms indicative of ACS.
3. Apply current guidelines from ACC/AHA for risk stratification and treatment of ACS.
4. Recall distinguishing features for STEMI and NSTEMI myocardial infarction.
5. Describe time goals, decision pathways, and treatment strategies in ACS care.



Level VI – Advanced and Special Situations

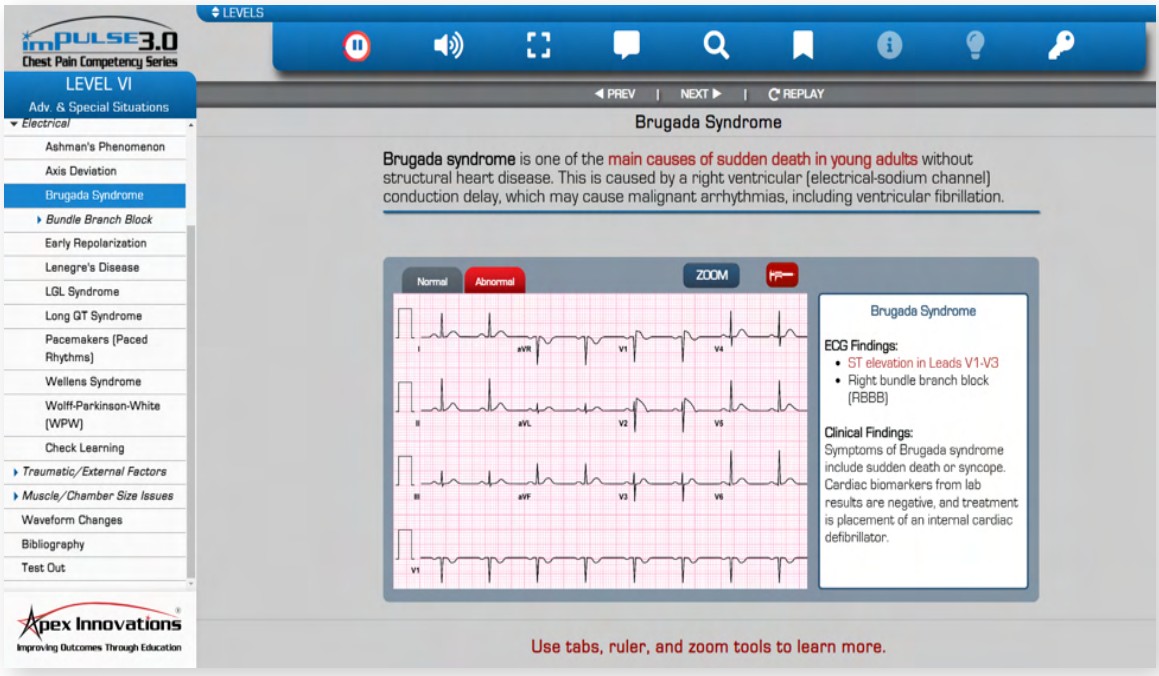
Course Description

Level VI of imPULSE 3.0 presents advanced, special situations, which may occur in clinical practice and affect the ECG. In this learning experience, review specific conditions, including heart disease, electrolyte imbalance, drug use, conduction disorders, and more, along with expected ECG changes, possible causes, and clinical findings. Increase your knowledge by examining the 12-lead ECG depicting these situations and comparing them to normal. Use interactive tools to measure waveforms. Better patient outcomes are achievable through improved knowledge and competency.

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Explain how changes in a patient's condition can affect the physiology of the heart and change the appearance of the QRS waveform.
2. Recognize abnormal ECG waveforms and key clinical observations related to drug use, electrolyte imbalance, and conduction disorders.
3. Identify various conditions affecting heart function such as heart disease, congenital anomaly, and other special situations.
4. Describe physical conditions or injuries which may affect heart physiology and the ECG waveform patterns.



Level VII – Excellence in ACS Care

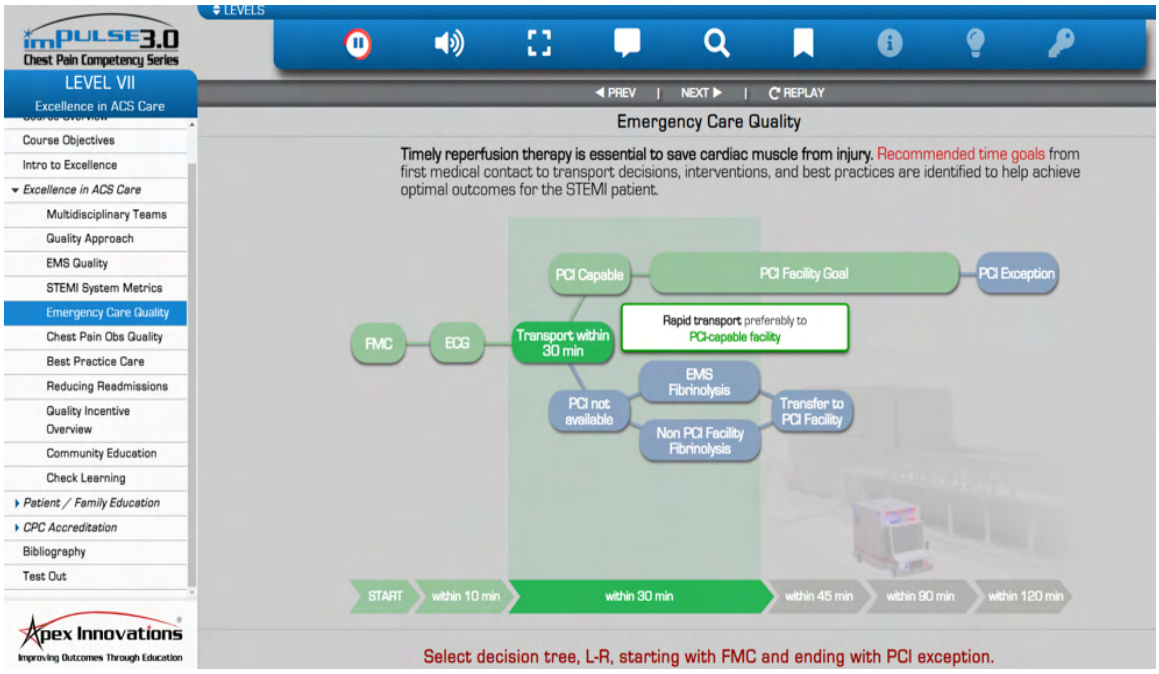
Course Description

Level VII of imPULSE 3.0 highlights individual and organizational excellence. This learning experience introduces quality initiatives and metrics to consider when planning care for acute coronary syndrome (ACS). Learn how multidisciplinary team collaboration is critical to promote efficient, effective, and optimal response times to save cardiac muscle and improve outcomes. Additional best practice information will assist with post-discharge care to help your patients stay healthy, regain their quality of life, and reduce their chance of readmission. A review of community education through Early Heart Attack Care education (EHAC) is presented to help you prepare families and neighbors to make the initial call for help.

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Recognize the indicators of a quality cardiac response program.
2. Identify the critical time goals in the STEMI system of care.
3. Describe multidisciplinary best practices of care for STEMI patients.
4. Explain appropriate patient and family education goals to prevent readmissions.



Level VIII – ECG Library

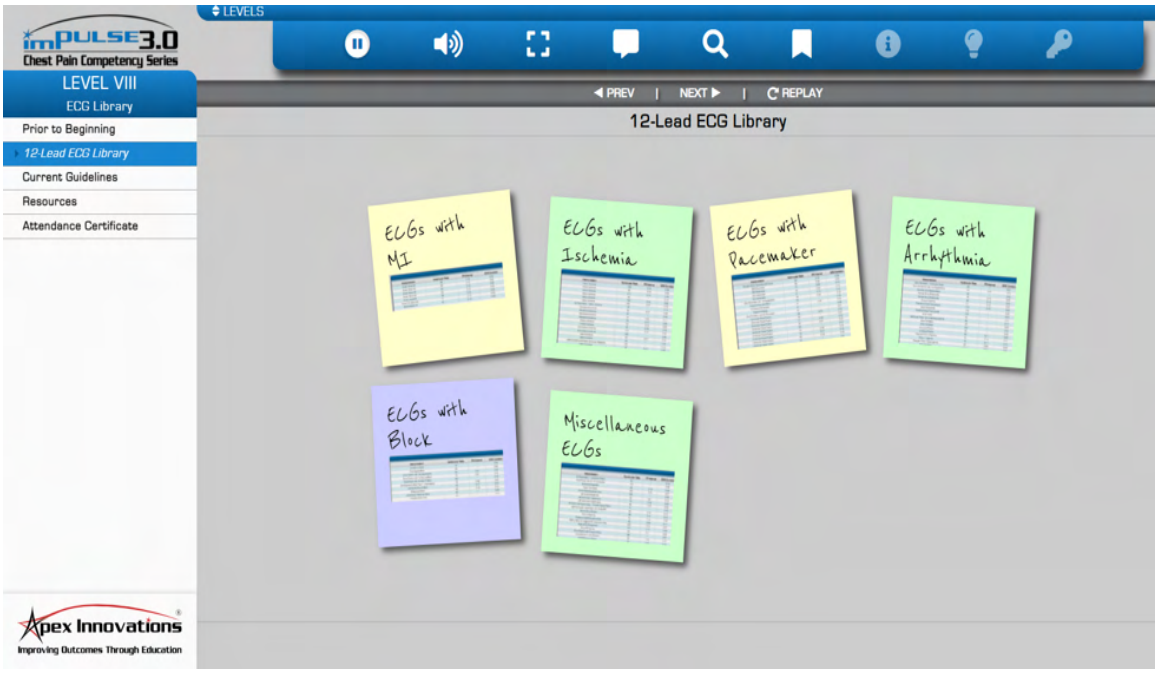
Course Description

Level VIII of imPULSE 3.0 is a non-CE awarded course that includes the reference library, filled with over 100 12-lead ECG's, current guidelines, and relevant information.

Course Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Understand nuances associated with different types of ECG rhythms.
2. Review appropriate guidelines and relevant best practices for emergency care.



Level IX – Early Heart Attack Care

Course Description

The Early Heart Attack Care course delivers the signs, symptoms and symbols of early heart attack care. This free educational program is authored by Dr. Raymond Bahr and promoted by the ACC Accreditation Services (formerly Society of Cardiovascular Patient Care). EHAC stresses the message that heart attacks have beginnings and the public can help with recognition and response as well as pledge to act to save a life.

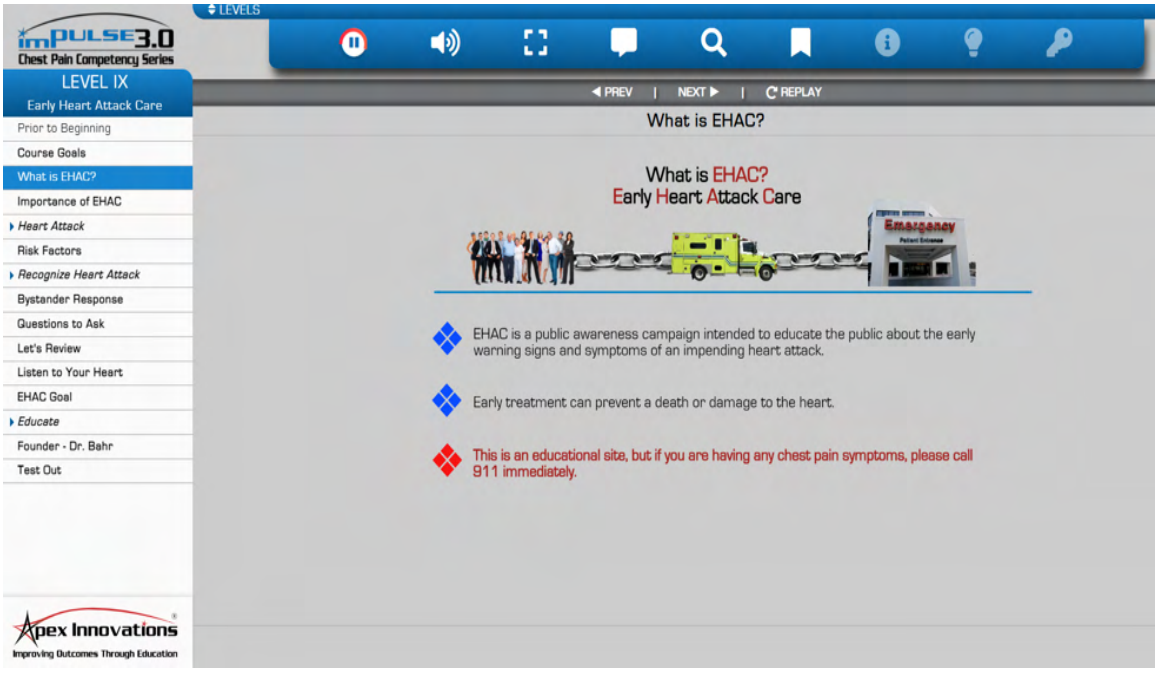
Course Goals

Primary Goals:

- Learn that heart attacks have beginnings.
- Focus on interventions during the beginning of a heart attack.

Secondary Goals:

- Teach the public that early intervention is required to save lives of patients having a heart attack.
  - Call 911: this starts the treatment earlier and supports timely response by hospital staff
  - Bystander support: insist the patient get medical attention
  - Impact of delay: loss of time is equated to loss of heart muscle
- Encourage hospitals to teach EHAC along with CPR.
- Encourage hospitals to establish a comprehensive plan for patients with chest pain with emphasis on early heart attack care.



Continuing Education Information

	Levels	Testing Min.	CNE	CME	CPE	CEH	FL CEH	PT CCH*/ CE
I	Cardiac Anatomy & Physiology	45	2.50	2.00	2.00	2.50	2.50	2.50
II	Obtaining the ECG	45	3.00	2.00	2.00	2.50	2.50	3.00
III	ECG Rhythms	45	4.00	3.00	3.00	3.50	3.50	4.00
IV	12-Lead ECG	60	4.50	4.00	4.00	4.00	4.00	4.50
V	Acute Coronary Syndrome	45	3.50	3.00	3.00	3.00	3.00	3.50
VI	Advance & Special Situations	60	4.50	4.00	4.00	4.00	4.00	4.50
VII	Excellence in ACS Care	45	2.00	2.00	2.00	2.00	2.00	2.00
VIII	ECG Library	Untimed	--	--	--	--	--	--
IX	EHAC	Untimed	--	--	--	--	--	--
	TOTAL	**345**	**24.00**	**20.00**	**20.00**	**21.50**	**21.50**	**24.00**

JA. In support of improving patient care, Apex Innovations is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

24 CNE. Apex Innovations designates this enduring material for 24 ANCC contact hours for nurse.

20 CME. Apex Innovations designates this enduring material activity for a maximum of 20 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

20 CPE. Apex Innovations designates this knowledge-based enduring material for 20 ACPE contact hours for pharmacists.

21.5 CEH. This CE activity is accredited for 21.5 CEH by Apex Innovations, an organization accredited by the Commission on Accreditation for Pre-Hospital Continuing Education (CAPCE).

21.5 FLCEH. Apex Innovations has been approved by the Florida Emergency Medical Services as an educational provider for EMS and Paramedics continuing education hours and have course completion roster and tracking number available on the CE Broker website.

24 CCH. Apex Innovations is recognized by the Physical Therapy Board of California as an approved reviewer and provider of continuing competency courses for The State of California.