

“UHS Basic and Advanced Cardiac Life Support Course” [UHSBACLS].

DETAILED PROGRAM

MODULE	TIMINGS
INTRODUCTION	9:00- 9:20 AM
GENERAL CONCEPTS OF BASIC LIFE SUPPORT	9:20- 9:40 AM
BLS FOR ADULTS	9:40- 10:15 AM
USE OF AUTOMATED EXTERNAL DEFIBRILLATION	10:15- 10:25 AM
PRACTICE	10:25- 11:25 AM
BREAK	11:25- 11:45 AM
BLS FOR CHILDREN (1 TO 8 YEARS)	11:45 AM - 12:15 PM
BLS FOR INFANTS (0 TO 12 MONTHS)	12:15 – 12:30 PM
RELIEF OF CHOKING	12:30- 12:40 PM
ECG for ACLS	12:40- 1:20 PM
LUNCH	1:20- 2:20 PM
AIRWAY MANAGEMENT	2:20- 3:20 PM
ACLS	3:20-4:00 PM
ANAPHYLAXIS	4:00-4:10 PM
ACLS CASES	4:10-5:00 PM
SYSTEM OF CARE	5:00-5:20 PM
CERTIFICATION EXAM	5:20- 6:15 PM

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MODULES	TOPICS TO BE COVERED	SESSION DURATION	LEARNING OBJECTIVES	TEACHING LEARNING METHODS
INTRODUCTION:		(20 min)		
GENERAL CONCEPTS OF BASIC LIFE SUPPORT	<p>Why we need life support training</p> <p>General Concepts of Basic Life Support</p>		<ul style="list-style-type: none"> • Recognize the Importance of Life Support Training: <ul style="list-style-type: none"> • Understand the critical role of life support training in saving lives during emergencies. • Identify the common scenarios where BLS training can be applied. • Understand the Statistics and Impact: <ul style="list-style-type: none"> • Review statistical data on survival rates with and without BLS intervention. • Discuss case studies illustrating the impact of prompt BLS. • Identify Legal and Ethical Considerations: <ul style="list-style-type: none"> • Understand the legal responsibilities and protections for individuals providing BLS. • Discuss the ethical implications of providing or withholding life support. 	PPT, Discussion
	Initiating Survival	Chain of	<ul style="list-style-type: none"> • Understand the components of the Chain of Survival and their significance. • Discuss how early intervention in each link of the chain improves survival rates. 	PPT
	2020 BLS Guideline Changes (Ref to all major guidelines)			PPT
BLS FOR ADULTS		(60 min)		

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BLS for Adults

Recognition
need

of **Identify Signs of Cardiac Arrest:**

PPT

Video

- Understand the common signs and symptoms of cardiac arrest, including unresponsiveness, absence of normal breathing, and lack of a pulse.
- **Understand the Importance of Early Recognition:**
 - Discuss the time-sensitive nature of cardiac emergencies and the need for prompt action.
- **Develop Situational Awareness:**
 - Learn to assess the environment and circumstances to ensure personal and scene safety.
 - Understand the importance of remaining calm and focused during an emergency.

Look, listen, Feel

• **Performing a Primary Assessment:**

Video, Discussion

DOAP

- Understand how to position the patient to perform an effective assessment.
- Learn the steps of the initial assessment: checking for responsiveness, breathing, and pulse.
- Observe the patient for any visible signs of life or movement.
- Identify signs of abnormal breathing, such as gasping or agonal respirations.

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- Recognize the absence of breathing or abnormal breathing sounds that indicate a need for immediate intervention.
- Practice feeling for a carotid pulse in adults and children or a brachial pulse in infants.
- Understand the significance of an absent pulse and the need to initiate CPR promptly.

Call for help/
Support

1. Activating the Emergency Response System:

- Understand how to call for emergency medical services team.
- Learn the key information to provide when calling for help, including location, nature of the emergency, and patient condition.

2. Delegating Tasks:

- Recognize the importance of delegating the call for help to a bystander if available, while you begin providing care.
- Learn effective communication strategies to ensure the bystander provides accurate information to the dispatcher

Video

Demonstration

Chest
Compression

Position, rate,
depth. recoil

- Learn the steps and techniques of performing effective CPR on adults.
- Understand the importance of chest compressions, ventilation, and the appropriate ratio for each.

- Learn the correct hand placement, compression depth (at least 2 inches), and rate (100-120 compressions per minute).
- Understand the importance of allowing full chest recoil between compressions.

Video

Demonstration

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	Handson	<ul style="list-style-type: none"> • Participate in simulated emergency scenarios to practice recognition of need, assessment, and calling for help. • Develop confidence and competence through hands-on practice and role-playing exercises. 	Simulation Practice DOAP
	Breath Support with Open Airway	(30 min)	
	Adult Mouth-to-Mask and Bag-Mask Ventilation	<ul style="list-style-type: none"> • Discuss the methods for ensuring a clear and open airway. • Learn techniques for dealing with airway obstruction. • Understand the indications for and methods of rescue breathing. • Practice techniques for providing effective rescue breaths • Learn the technique for providing effective rescue breaths using a barrier device or mouth-to-mouth. • Understand the ratio of 30 chest compressions to 2 rescue breaths for adult victims. 	Video Demonstration
	One Rescuer BLS/CPR for Adults	<ul style="list-style-type: none"> • Sequence of Actions: • Practice the sequence of assessing the scene for safety, checking for responsiveness, calling for help, and beginning CPR. • Understand the importance of minimizing interruptions in chest compressions. 	Video Demonstration
USE OF AUTOMATED EXTERNAL DEFIBRILLATOR	Use of Automated External Defibrillator (AED)	20 min <ul style="list-style-type: none"> • Understand the function and importance of AEDs in cardiac emergencies. • Learn the correct procedure for using an AED. 	Video Demonstration

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Two-Rescuer
for Adults

BLS/CPR

• **Team Dynamics and Roles:**

Video

Demonstration

- Understand the roles and responsibilities of each rescuer in a two-rescuer scenario.
- Learn effective communication strategies and the importance of coordination between rescuers.

• **High-Quality Chest Compressions:**

- Practice the transition between rescuers to minimize interruptions and ensure high-quality compressions.
- Learn the importance of consistent compression depth and rate.

• **Ventilation Techniques:**

- Understand the technique for providing rescue breaths with one rescuer performing compressions and the other providing ventilations.
- Learn how to use a bag-valve-mask (BVM) for delivering breaths.

• **Using an AED:**

- Learn the steps for integrating an automated external defibrillator (AED) into the CPR sequence.
- Understand the importance of prompt defibrillation and how to coordinate AED use between rescuers.

Adult Basic Life Support
(BLS) Algorithm

1. **Understand the BLS Algorithm:**

- Learn the steps of the Adult Basic Life Support (BLS) algorithm, including the initial assessment and CPR sequence.

Simulation,

DOAP

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- Understand the flow of the algorithm and the decision points for actions such as defibrillation and advanced airway placement.
- 2. Initial Assessment:**
 - Practice the steps for assessing responsiveness, checking for breathing and pulse, and calling for help.
 - Understand the importance of quickly recognizing cardiac arrest and beginning CPR.
- 3. CPR and AED Integration:**
 - Learn how to perform high-quality CPR and use an AED according to the BLS algorithm.
 - Understand the sequence for delivering shocks and continuing CPR after defibrillation.
- 4. Managing Airway and Breathing:**
 - Understand the techniques for managing the airway and providing effective ventilations.
 - Learn when and how to use advanced airway devices if available.
- 5. Continuous Monitoring and Reassessment:**
 - Learn the importance of continuous monitoring of the patient’s condition and reassessment every 2 minutes.
 - Understand the steps for reassessing pulse and rhythm, and making decisions based on the patient’s response to treatment.

Integration and Practice

Simulated Scenarios:

- Participate in simulated emergency scenarios to practice one rescuer CPR, two rescuer CPR, and following the Adult BLS algorithm.

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- Develop confidence and competence through hands-on practice and role-playing exercises.

Handson

Handson

Participate in simulated emergency scenarios to practice Sim

BREAK

15 min

**BLS FOR CHILDREN
(1 TO 8 YEARS)**

30 min

BLS for Children 1 – Puberty

- Learn the steps and techniques of performing effective CPR on children, and infants.
- Understand the importance of chest compressions, ventilation, and the appropriate ratio for each.
- Differences from adult CPR

PPT
Video

One & Two Rescuer BLS for Children

Pediatric BLS Algorithm

Child Ventilation

Handson

Participate in simulated emergency scenarios to practice

**BLS FOR INFANTS
(0 TO 12 MONTHS)**

Demonstration

5 min

One & Two Rescuer BLS for Infants (0 to 12 months old)

Video

**RELIEF OF
CHOKING**

Demonstration

5 Min

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ACLS	Relief of Choking For Adults, Children, & Infants	<ul style="list-style-type: none"> • Learn techniques for dealing with choking and airway obstruction. 	<p>Video Demonstration</p>
	Introduction To ACLS	10 Min	PPT
	what are the causes of cardiac arrest (cardiac causes)	Understand the common causes of cardiac arrest in adults	
ADVANCED CARDIAC LIFE SUPPORT	(Hs and Ts) Normal Heart Anatomy and Physiology	Hs Ts 20 min	
	ACLS Rhythms and Interpretation Shockable and Non Shockable Rhythms	<p>1. Understand Basic Cardiac Anatomy and Physiology:</p> <ul style="list-style-type: none"> ○ Review the structure and function of the heart. ○ Understand the electrical conduction system of the heart, including the SA node, AV node, and the His-Purkinje system. <p>Normal and Abnormal Cardiac Rhythms</p> <p>1. Identify Normal Sinus Rhythm:</p> <ul style="list-style-type: none"> ○ Recognize the characteristics of normal sinus rhythm. <p>2. Understand the importance of establishing a baseline for comparison.</p> <p>3. Importance of Cardiac Rhythm Recognition in ACLS:</p> <ul style="list-style-type: none"> ○ Explain why accurate recognition of cardiac rhythms is crucial in ACLS. ○ Discuss the impact of different rhythms on patient management and outcomes. 	PPT

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The ACLS Survey (A-B-C-D)

1. Understanding the ACLS Survey

PPT

1. Define the ACLS Survey:

Video

- Understand what an ACLS survey is and its role in the ACLS protocol.
- Differentiate between the primary survey (BLS assessment) and the secondary survey (ACLS assessment).

2. Identify the Components of the ACLS Survey:

- Learn the key elements of the ACLS survey: Airway, Breathing, Circulation, and Differential Diagnosis (ABCD).

2. Conducting the Primary Survey

1. Airway Management:

- Understand the importance of airway patency and how to assess and manage it.
- Review techniques for basic and advanced airway management, including the use of airway adjuncts and intubation.

2. Breathing Assessment:

- Learn how to assess breathing adequacy.
- Understand the indications for and methods of providing effective ventilation, including bag-valve-mask (BVM) ventilation and advanced airway devices.

3. Circulation Assessment:

- Recognize the signs of effective circulation and how to assess pulse and blood pressure.
- Learn the importance of early defibrillation and the use of an automated external defibrillator (AED) or manual defibrillator.

4. Defibrillation and Rhythm Analysis:

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- Understand how to perform rhythm checks and identify shockable and non-shockable rhythms.
- Review the correct use of defibrillation, synchronized cardioversion, and medication administration as part of the primary survey.

3. Conducting the Secondary Survey

1. Detailed History and Physical Examination:

- Learn how to obtain a comprehensive patient history, including medical history, medications, allergies, and events leading up to the emergency.
- Understand the importance of a thorough physical examination.

2. Differential Diagnosis: (Reemphasise)

- Develop skills in identifying and prioritizing potential causes of the patient’s condition (e.g., the H’s and T’s: Hypovolemia, Hypoxia, Hydrogen ion (acidosis), Hypo-/hyperkalemia, Hypothermia, Tension pneumothorax, Tamponade (cardiac), Toxins, Thrombosis (pulmonary and coronary)).
- Understand the importance of considering reversible causes during ACLS management.

4. Team Dynamics and Communication

1. Effective Team Communication:

- Recognize the importance of clear and concise communication within the ACLS team.
- Learn strategies for effective team communication, including closed-loop communication and leadership roles.

2. Role Assignments and Task Management:

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- Understand the roles and responsibilities of each team member during an ACLS survey.
- Discuss how to manage tasks efficiently and ensure that all critical actions are performed.

**AIRWAY
MANAGEMENT**

30 Min

Basic Airway Adjuncts

• **Identify Common Airway Adjuncts:**

Video

- Learn the indications, contraindications, and proper use of oropharyngeal airways (OPA) and nasopharyngeal airways (NPA).

Demonstration

Basic Airway Technique

Basic Airway Management:

- Review techniques for manual airway maneuvers (e.g., head-tilt-chin-lift, jaw-thrust maneuver).
- Understand the indications for and proper use of bag-valve-mask (BVM) ventilation.

Advanced
Adjuncts

Airway

- Learn the indications, contraindications, and technique for endotracheal intubation.
- Understand the use and placement of supraglottic airway devices (e.g., laryngeal mask airway, King LT).

Video

Demonstration

Routes Of Access

• **Establishing Vascular Access:**

Video

- Understand the importance of establishing vascular access in ACLS.
- Learn the techniques for obtaining peripheral intravenous (IV) access.

Demonstration

• **Alternative Routes of Access:**

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- Discuss the indications, techniques, and complications of intraosseous (IO) access.
- Understand when and how to use central venous access in emergency situations.

• **Practice and Troubleshooting:**

- Demonstrate the proper technique for establishing IV and IO access.
- Discuss common complications and troubleshooting strategies for vascular access.

Pharmacological Tools

• **Understand ACLS Pharmacology:**

PPT

- Review the commonly used medications in ACLS, including their indications, dosages, and mechanisms of action.
- Understand the role of drugs such as epinephrine, amiodarone, atropine, and adenosine.

• **Medication Administration:**

- Learn the correct methods for preparing and administering ACLS medications.
- Discuss the importance of timing and dosing in the context of ACLS algorithms.

• **Pharmacological Management of Cardiac Arrest:**

- Understand the drug algorithms for managing different cardiac arrest rhythms (e.g., VF/pulseless VT, asystole/PEA).

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- Review the use of medications in post-cardiac arrest care.

	Hands-on	Participate in simulated emergency scenarios to practice	
LUNCH BREAK		60 min	
ACLS CASES		(75 min)	
	Pulseless Tachycardia and Ventricular Fibrillation	<ul style="list-style-type: none"> • Recognize Tachyarrhythmias: • Identify common tachyarrhythmias (e.g., sinus tachycardia, atrial fibrillation, atrial flutter, supraventricular tachycardia, ventricular tachycardia). • Understand the clinical significance and management of tachyarrhythmias in ACLS. 	<p>PPT</p> <p>Video</p> <p>Demonstration</p>

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Pulseless Electrical Activity Asystole • **Identify Pulseless Rhythms:**

- Recognize life-threatening pulseless rhythms (e.g., pulseless ventricular tachycardia, ventricular fibrillation, asystole, pulseless electrical activity).
- Understand the immediate interventions required for pulseless rhythms.

Adult Cardiac Arrest Algorithm • **Apply ACLS Algorithms:**

- Learn the ACLS algorithms for managing bradyarrhythmias and tachyarrhythmias.
- Understand the use of medications, electrical therapy (e.g., defibrillation, cardioversion), and other interventions.

Symptomatic Bradycardia • **Recognize Bradyarrhythmias:**

- Identify common bradyarrhythmias (e.g., sinus bradycardia, first-degree AV block, second-degree AV block, third-degree AV block).
- Understand the clinical significance and management of bradyarrhythmias in ACLS.

Adult Bradycardia with Pulse Algorithm Learn the ACLS algorithms for managing bradyarrhythmias

Tachycardia Learn the ACLS algorithms for managing tachyarrhythmias

Stable And Unstable Tachycardia Learn the ACLS algorithms for managing tachyarrhythmias

Adult Tachycardia With Pulse Algorithm Learn the ACLS algorithms for managing tachyarrhythmias

SYSTEMS OF CARE

15 Min

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	When to Stop	Team Dynamics and Communication:	Video
		<ul style="list-style-type: none"> Learn the importance of effective communication and teamwork during BLS. Discuss roles and responsibilities within a BLS team. 	Demonstration
		Understand the endpoint of CPR	
	Post-Cardiac Arrest Care	Understand the importance of Post Cardiac Arrest care	
BREAK		15 Min	
CERTIFICATION EXAM			
	Certification Exam	20 min	
	1 Instructor-Participants	6-8	
		<ol style="list-style-type: none"> Assess the participant on skills for satisfactory skill acquisition BLS execution Rhythm recognition/ Team performance of scenario MCQ assessment 70% as successful 	Instructors to decide A. successful B. Remedial C. Repeat