



# Advanced Cardiovascular Life Support (ACLS)

Study assistance for employees of  
Lake EMS



# Situation



- Much of the great care we perform relies on our protocols
- Our protocols are primarily based initially on the guidelines of the American Heart Association
  - The challenge is that we have learned to apply a higher level of care since the 2010 guideline release



# Florida Bureau of EMS



- The Florida Bureau of EMS requires that every paramedic maintain a contiguous ACLS card
- As a licensed ALS service, Lake EMS requires and provides annual training
  - Lake EMS holds a Training Center contract with the National office in Dallas to meet this need



# The issue



- The issue at hand is that we prepare for ACLS only once every 2-years and we prepare to apply our protocols daily
- That said, this guide is designed to guide you to review salient educational points within the ACLS Provider Manual
  - Prior to class testing



# To start



- So open up the textbook and follow along with the slides
  - Of course that is after you remove the plastic from the textbook



# Sections of the textbook



- Part 1: Course overview
- Part 2: The Systemic Approach: The BLS and ACLS Surveys
- Part 3: Effective Resuscitation Team Dynamics
- Part 4: Systems of Care
- Part 5: The ACLS Cases



# Part 1

## Course overview, pages 1-7



# Course overview



- Page 1 discusses the course objectives
  - Meaning what you should be able to recognize/demonstrate/perform after successful completion





# Course overview



- Page 2 lists the required knowledge and skills needed for successful course completion



# Course overview



- Page 3 shows us what EKG rhythms we need to be able to demonstrate
  - It is important to understand that the AHA wants us to understand the rhythms and pharmacology **and** to be able to apply them correctly in a scenario or real life incident



# Course overview



- Page 4 reminds us of the importance of the **red** Critical Concept boxes
  - They are good reminders
  - Like they might show up as a test question or two



# Course overview



- Lastly, page 7 shows the base requirements to successfully complete ACLS
  - This is in addition to understanding EKGs, pharmacology, and when to use appropriate therapies and treatments



## Part 2

# The Systemic Approach: The BLS and ACLS Surveys, pages 11-16



# BLS and ACLS Surveys



- There is a high compliment of questions on the importance of good quality CPR
  - We see the results here at Lake EMS with our higher than normal save rate
- CPR is important, it is a critical aspect of every MegaCode in class and in every real life cardiac arrest situation



# BLS and ACLS Surveys



- Study the steps on pages 13-14 and remember the **Critical Concepts** boxes
  - Historically the AHA likes to ask sequence-based questions so be able to recall the proper order of CPR



# BLS and ACLS Surveys



- Page 16 is information that is not new to us but remember how to detect the need to improve CPR quality





## Part 3

# Effective Resuscitation Team Dynamics, pages 17-24



# Resuscitation Team Dynamics



- Pages 19-23 lists 7 keys to effective resuscitation team dynamics
  - Be able to recognize each of these types
  - We may feel that our co-workers don't require them and I agree; however, the test was made for hospital as well as out-of-hospital personnel



# Part 4

## Systems of Care, pages 25-32



# Systems of Care



- Page 26 discusses medical emergency team (MET) and rapid response teams (RRT) that are used in hospitals
  - Understand why they were formed and the benefit they offer
- A further explanation is also found on page 31



# Systems of Care



- Page 28 discusses post-arrest care with attention to:
  - Therapeutic hypothermia
  - Hemodynamic and ventilation optimization
  - Immediate coronary reperfusion with PCI
  - Glycemic control
- Understand the importance of these



# Part 5

## The ACLS Cases, pages 33-148



# The ACLS Cases



## ACLS Cases are further broken down into 11-parts:

1. Respiratory Arrest Care
2. VF with CPR/AED
3. ALS VF
4. ROSC
5. PEA
6. Asystole
7. ACS
8. Bradycardia
9. Unstable Tachycardia
10. Stable Tachycardia
11. Stroke



# ACLS Case: Respiratory Arrest Care, pages 34-49



- Looks a lot like the earlier CPR component with basic and advanced airway techniques
  - Know the CPR steps, they are repeated on page 35
  - Know the ventilation rates with a pulse, during a code both with and without an advanced airway on page 36 and 47
    - *Must be important...*





# ACLS Case: Respiratory Arrest Care, pages 34-49



- Remember the importance to continuous waveform capnography on page 37
  - Remember the training on how immediate the results are with capnography?
  - Important then and now



# ACLS Case: Respiratory Arrest Care, pages 34-49



- Page 46 has important considerations on suctioning the oropharynx as well as the trachea
- Page 48 has a warning on the routine use of cricoid pressure; understand the rationale



## ACLS Case: VF with CPR/AED, pages 49-58



- Although many class participants skim over this section, there are numerous questions here that are routinely missed on the test
  - Regardless if someone misread it or not I would recommend reading this area slowly to understand the sequence that the AHA assesses



## ACLS Case: ALS VF, pages 59-72



- Start with the algorithm on page 61
  - Understand the dosage, route, and sequence of administering therapies to include defibrillation
  - Page 62 shares insight into why minimal compression interruptions are important
  - Page 63 discusses recommendations to decrease chest compression interruptions



# ACLS Case: ALS VF, pages 59-72



- Page 64 has Foundational Facts on both:
  - Clearing for defibrillation
    - Including lessons learned in Europe
  - Paddles versus pads
- On this page is also good information on when to check for a pulse



## ACLS Case: ALS VF, pages 59-72



- On page 67, what is the target range for PETCO<sub>2</sub> (capnography)
- Pages 69-70 discuss the 3 main routes of medication administration:
  - Know the differences in how medications are given
  - Which is preferred



## ACLS Case: ROSC, pages 72-77



- One of the largest additions to the 2010 Guidelines within the new ACLS textbook is in regards to Immediate Post-Cardiac Arrest Care/Return of Spontaneous Circulation
  - Consequently there are many questions on it
  - Be prepared



# ACLS Case: ROSC, pages 72-77



- Understand:
  - Treatment priorities
  - Oxygen
  - Capnography
  - Ventilation
  - Hypothermia contraindications
  - Hypotension therapy
  - BP
  - Hypothermia ranges and duration of usage





# ACLS Case: PEA, pages 78-85



- Understand the algorithm on page 80 (same as page 61)
  - Understand the dosage, route, and sequence of administering therapies
  - And no, we do not pace PEA
- Pages 83-85 have some great explanations on the causes of PEA (H's and T's)



## ACLS Case: Asystole, pages 86-90



- Understand the algorithm on page 80 (same as page 61)
  - Understand the dosage, route, and sequence of administering therapies
  - And no, we do not pace or defibrillate Asystole



# ACLS Case: Asystole, pages 86-90



- On page 87, understand the section on:
  - DNAR (their term) orders
  - Asystole as an end point
- Pages 89-90 also go into depth that might be a benefit for you, also



# ACLS Case: ACS, pages 91-103



- Page 98 recommends routine usage of 12-Lead EKGs
  - Pages 98-101 (4-pages) are spent on the importance of the 12-Lead
  - Understand how to assess a 12-Lead, use the [on-line review](#) as a guide and feel free to make an appointment with [me](#) and I can help you



# ACLS Case: ACS, pages 91-103



- Understand the algorithm on page 94
  - Understand the dosage, route, and sequence of administering therapies
  - Understand the definitive therapies for each of the classification choices after the 12-Lead EKG



# ACLS Case: Bradycardia, pages 104-114



- Understand the algorithm on page 109
  - Understand the dosage, route, and sequence of administering therapies
  - Pay particular attention to the FYI 2010 Guideline box at the page 109 bottom
- Page 110 has an area called Treatment Sequence Summary (Box 4), understand it for class



# ACLS Case: Unstable Tachycardia, pages 114-123



- Understand the algorithm on page 118
  - Understand the dosage, route, and sequence of administering therapies
  - Know the dosages for cardioversion as listed on this page, some older ACLS textbooks list a wrong dosage on page 123



# ACLS Case: Unstable Tachycardia, pages 114-123



- Page 117 has a Foundational Fact box that discusses unstable condition signs and symptoms
  - Page 119 has an area called Decision Point, understand the differentiation of stable versus unstable tachycardia





# ACLS Case: Unstable Tachycardia, pages 114-123



- Page 120 and 121 discusses challenges of treating polymorphic VT/Torsades de Pointes
  - Know the treatment rationale as per the AHA



# ACLS Case: Stable Tachycardia, pages 124-130



- Understand the algorithm on page 127 (same as page 118)
  - Understand the dosage, route, and sequence of administering therapies



## ACLS Case: Stroke, pages 130-147



- There is an impressive algorithm on page 134 but it's focus is on care within the emergency department
  - Focus on page 136 with regard to EMS care, transport, and stroke assessment



# ACLS Case: Stroke, pages 130-147



- The CT Scan is to stroke care what the 12-Lead EKG is to cardiac care
  - Without them we cannot correctly categorize the situation and treat appropriately
  - That said, read page 141 regarding the importance of a non-contrast CT scan



## In conclusion



- The largest pool of ACLS questions surround cardiac arrest and its management
  - The test is comprised of 50-questions
- Every question can be traced back to the information in the textbook that we have highlighted here



## In conclusion



- We hope this study assistance is a benefit for you
  - Take the time to review before class, this is intended to be a benefit for you
- Like at work, answer the scenario-based questions as if you are treating a loved one
  - We wish you all the best



# **Advanced Cardiovascular Life Support (ACLS) Study assistance for employees of Lake EMS**

By the Quality Development Department