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
• 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
• 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
• On page 67, what is the target range for PETCO₂ (capnography)
• Pages 69-70 discuss the 3 main routes of medication administration:
  – Know the differences in how medications are given
  – Which is preferred
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
• 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
• 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
• 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
Page 120 and 121 discusses challenges of treating polymorphic VT/Torsades de Pointes

– Know the treatment rationale as per the AHA
• Understand the algorithm on page 127 (same as page 118)
  – Understand the dosage, route, and sequence of administering therapies
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
• 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