INTERNATIONAL TRAUMA LIFE SUPPORT
OHIO

OHIO CHAPTER
AMERICAN COLLEGE OF
EMERGENCY PHYSICIANS

CASE-BASED LEARNING
INSTRUCTOR/COORDINATOR GUIDE

Ohio Chapter International Trauma Life Support
Advisory Board

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TABLE OF CONTENTS

INTRODUCTION

In our continuing effort to provide excellence and consistency in trauma education the Ohio Chapter International Trauma Life Support developed this case-based learning instructor guide.

The guide has been developed to define goals and objectives of the ITLS case based course and to insure the highest quality of the material contained in the course. Its intent is to remain consistent with the mission and vision of the Chapter.

As an ITLS affiliate faculty member, instructor, course director or course coordinator, you are a vital link in the highest quality educational programs presented to the emergency health care providers in the State of Ohio.

It is your responsibility to understand and closely adhere to the guidelines set forth in this manual. This will help maintain the ITLS course integrity and insure a high quality educational experience for the students you teach.

ACKNOWLEDGMENTS

ITLS Ohio would like to thank and acknowledge Jamie Ross for his dedication to this guide. Without his efforts and the involvement of the reviewers this guide would not have been possible.

Thanks are also in order to Amy Boise of ITLS Arizona and Neil Jones of ITLS Pennsylvania for their help with the Case-Based and Problem Based Learning format.

MISSION STATEMENT

The purpose of Ohio ITLS is to advance formalized pre-hospital trauma education and to represent the interests of Ohio's pre-hospital providers

VISION STATEMENT

Recognize the importance of quality pre-hospital care

Endeavor to improve the standards and education of pre-hospital care providers

Endorse the continuing educational efforts provided by conferences and other educational endeavors

Act as a resource for all pre-hospital providers

Enhance the image of pre-hospital trauma care

Maintain and nurture the development of ITLS in the state

Promote the legislative process related to emergency care

Collaborate with related agencies

Promote and encourage pre-hospital research, injury prevention and public education

OVERVIEW OF CASE-BASED LEARNING

CASE-BASED LEARNING (CBL) is centered on a specific patient's case history. The aim is to explore the patient's condition, make and justify recommendations for treatment bearing in mind the variables that make up that individual's needs.

Case-based learning is an excellent alternative to didactic learning, and is particularly effective in helping students develop the ability to apply concepts and ideas to practical experience. With case-based learning, students develop skills in analytical thinking and reflective judgment by discussing complex, real-life scenarios.

What is Case-Based Learning?

Cases are factually-based, complex problems written to stimulate classroom discussion and collaborative analysis. Case-based learning involves interactive, student-centered exploration of realistic and specific situations. As students consider problems from a perspective which requires analysis, they strive to resolve questions that have no single right answer.

Why use Case-Based Learning?

- In their effort to find solutions and reach decisions through discussion, students sort out factual data, reflect on their experiences, and draw conclusions they can relate to new situations. In the process, they acquire knowledge and develop analytic, collaborative, and communication skills.
- Cases add meaning by providing students with the opportunity to see theory in practice. Instructors who use case-based learning say that their students are more engaged, interested, and involved in the class.
- CBL develops students' skills in group learning, speaking, and critical thinking.
- The use of cases in the classroom makes subject matter more relevant.

Attributes of Case-Based Learning

- Students define the nature of the problem as they perceive it, dividing a complex dilemma into manageable issues
- Students bring their own background knowledge and principles to bear upon the case
- Students raise points and questions, and defend their positions
- Students formulate strategies to analyze the data and generate possible solutions
- Collaboration and cooperation are key; competition is minimized
- The instructor directs the student discussion but is not an authoritarian
- Students may not agree, and sometimes a compromise is reached

THE COURSE

Students generally favor case-based learning courses, and their ability to solve real-life problems appears to increase over traditional instruction while some instructors have not supported the movement toward this type of learning. Contributing to this divergence is the time requirement placed upon faculty to assess student learning, prepare course materials, and allow students to complete the reduction in coverage of course material.

Underlying procedures for using Case-Based Learning

- Key facts should be introduced in the written case and not added during the discussion
- Cases need to be complete enough so that the problem can be defined
- The size of the group should allow for free exchange among all participants. Groups larger than 12 tend to exclude many members from participating.
- Combined contributions of members of different discussion groups improve the learning experience
- Role-playing can help clarify some concepts by engaging students in problem solving from the perspectives of different key players

THE INSTRUCTORS

The selection of instructors for a case-based course can be the most difficult aspect encountered during coordination. Instructors must be well versed in didactic and psychomotor instruction; that is they must be able to teach both the traditional lectures and skill stations associated with ITLS. If an instructor lacks the ability to lecture or teach skill stations they will encounter difficulties with case-based learning. The true strength of case-based learning lies with the instructor's ability to effectively transfer information to the students.

Case-based learning is a flexible model. If an instructor uses leading questions to direct students toward an answer the instructor deems "correct," the model is not far removed from direct instruction. If the instructor, however, allows students to formulate their own opinions of a case by promoting, group-coordinated activities, debate, or simulated decision making, the model is more successful. The key difference is the extent to which an instructor directly leads the student versus promoting activities through which students can lead themselves and develop valuable reasoning skill in the process.

Instructors in case-based learning curriculum need to alter their traditional teaching methods of lectures, discussions, and asking students to memorize material. In case-based learning, the instructor acts more as a facilitator than disseminator of information. As such, instructors focus their attention on questioning student logic, providing hints to correct erroneous student reasoning, providing resources for student research, and keeping students on task. Because

this role will be foreign to some teachers, they may have trouble breaking out of their past habits.

Attributes of Case-Based Learning Instructors

- Knowing ALL the information in the book
- Excellent lecture and hands-on skills instruction
- Have the ability to prevent small sub-groups from controlling the case or distracting others
- Be objective without being emotionally invested in the case
- Be aware of the larger goals of the case
- Ask carefully designed questions
- Not letting the discussion become submerged in the details of the case, but rather ensures that discussion focuses on the ways to solve the problem

Tips for Case-Based Learning Instructors

- Anchor instruction in cases
- Actively involve learners
- Model professional thinking and action
- Provide direction and feedback
- Create a collaborative learning environment

THE STUDENTS

Most students have spent their previous years assuming their teacher was the main disseminator of knowledge. Because of this orientation towards the subject-matter expertise of their instructor and the traditional memorization of facts required of students, many students appear to have lost the ability to "simply wonder about something".

There is a tremendous responsibility placed on the students utilizing case-based learning. Because of this responsibility some students may not perform as well as others. It is imperative that the students know ahead of time the course is case-based and not the traditional lecture and skill based. The students need to come to class prepared to learn, and should have access to the textbooks in advance of the course. Students will understand the case better, if they are given careful introductory directions.

Process to help your students use cases to their best

- Determine the facts of the case
- Understand the dynamics of the situation
- Define the presenting problem. Determine the problem to be solved

- Generate a possible course of action or generate, assess, and propose a number of possible solutions
- Evaluate the strengths, weaknesses, opportunities, and threats to each course of action
- Make a decision regarding a satisfactory or at least workable plan of action

THE CASES

The realism of the case is equally as important as the instructor's ability to teach. If the case seems unrealistic and unable to flow it will fall apart and the effectiveness of learning will suffer.

Why use cases

- Create the need to know
- Provide a space to think about practice
- Raise the level of critical thinking skills (application/synthesis/evaluation), not recall
- Enhance the listening/cooperative learning skills
- Prompt deeper diagnosis and meaning
- Develop problem solving skills
- Help learners connect theory and practice
- Facilitate the social learning process of learning judgment
- Provide a vehicle for examining multiple points of view/hearing various voices
- Build partnership/collegiality among learners and teacher
- Encourage attention to and self-consciousness about assumptions and conceptions
- Allow students' questions to precipitate profound change in approach
- Help students learn to monitor their own thinking
- Reflect the contextual, situated, complex nature or knowledge
- Help students see connection to their own goals
- Help teachers become aware of their own tensions and ironies
- Teach students not to take things literally
- Teach students that there may not be one "right" answer, after all
- Illustrate interaction among variables (especially human ones)
- Teach that it is easy to overlook important details
- Get you thinking and brainstorming
- Get students to be active, not passive
- Can be structured and convergent, or unstructured and divergent
- Encompass an enormous range of possibilities
- Create a rich ambiguous learning environment
- Provide possibilities for all learners to be successful and a variety of roles

How to use the cases

There are 4 Small Group Technical Skills in a case based course. Each is centered on a group of lectures and skills stations, these will be discussed later. The 4 small group technical skills are:

Small Group Technical Skills 1: Rapid Patient Assessment
Small Group Technical Skills 2: Airway Management/Thoracic Trauma
Small Group Technical Skills 3: Shock Management
Small Group Technical Skills 4: Spinal Skills/Immobilization

In each of the small group technical skills there are a number of cases. The individual cases are designed around specific injuries. For example in the Shock Management Small Group Technical Skills there is a case designed around the recognition and management of a pelvic fracture. While it is understood that the patient with a pelvic fracture may have additional injuries the focus of the case is the pelvic fracture.

There are 7 areas for each case. Each area has vital information contained within. Some of this information will need to be conveyed to the student.

The ‘scenario’ section is blue and contains information to set the scenario. You should read aloud the information under ‘situation’. Once the student begins the scenario and inquires about the safety of the scene you can read the information under ‘scene size up’. The ‘injuries’ and ‘patient information’ sections are for the instructor to know the injuries the patient has and how the victim should respond, if you are using live victims this information can be shared with him/her.

The ‘assessment and findings’ section is yellow and contains information regarding the actual hands on assessment of the patient. All information in this section needs to be shared with the student after they demonstrate the proper technique for acquiring the information. Any specific information not contained in the section is assumed to be within normal limits or unchanged for the assessment.

The “key points’ section is green and contains information the instructor is expected to cover during the assessment. This can be covered during the assessment process or the assessment can be stopped. Some information can be read verbatim from the sheet or you may paraphrase; however, all the information must be conveyed.

The ‘unacceptable actions’ section is red and contains actions that should the student perform or fail to perform may result in a negative outcome for the patient.

The ‘cognitive objectives’ and ‘psychomotor objectives’ sections are grey and contain the cognitive and psychomotor objectives the student is expected to describe (cognitive) and demonstrate (psychomotor).

The back of each case has the ITLS Primary Survey, Detailed Exam and Ongoing Exam written out. The intent is for the instructors to use this as a reference when needed.

The Small Group Technical Skills

Small Group Technical Skills 1: Rapid Patient Assessment (Putting it all together)

In this group the focus is the full patient assessment. The students are expected to work though the entire assessment process. There are multiple injuries for all the patients in this group. There are 9 cases in this group, it is typically taught last.

Small Group Technical Skills 2: Airway Management/Thoracic Trauma

In this group the focus is airway and thoracic trauma. The students are expected to work through the case until they discover the intended injury. Once the students recognize the injury the instructor should focus the teaching, practical skills and discussion on the specific injury. There are 6 cases in this group they are:

- Airway Compromise
- Flail Chest
- Tension Pneumothorax
- Open Pneumothorax
- Massive Hemothorax
- Cardiac Tamponade

It is imperative the instructor moves quickly and effectively through the cases, all 6 must be covered. If the students fail to identify the intended injury it is the responsibility of the instructor to narrow the students focus towards the intended injury.

Small Group Technical Skills 3: Shock Management

In this group the focus is shock. The students are expected to work through the case until they discover the intended injury. Once the students recognize the injury the instructor should focus the teaching, practical skills and discussion on the specific injury. There are 6 cases in this group they are:

- Intra-abdominal Bleed
- Evisceration
- Severe Shock Decompensating
- Pelvic Fracture
- Bilateral Compound Femur Fractures
- Penetrating Wound above the Umbilicus

It is imperative the instructor moves quickly and effectively through the cases, all 6 must be covered. If the students fail to identify the intended injury it is the responsibility of the instructor to narrow the students focus towards the intended injury.

Small Group Technical Skills 4: Spinal Skills/Immobilization

In this group the focus is spinal motion restriction, immobilization and head injuries. The students are expected to work through the case until they discover the intended injury. Once the students recognize the injury the instructor should focus the teaching, practical skills and discussion on the specific injury. There are 6 cases in this group they are:

- Cervical Spine Injury - Prone Patient
- Cervical Spine Injury - Standing Patient
- Cervical Spine Injury - Rapid Extrication
- Cervical Spine Injury - Helmet Removal
- Cervical Spine Injury - Spinal Shock
- Closed Head Injury

It is imperative the instructor moves quickly and effectively through the cases, all 6 must be covered. If the students fail to identify the intended injury it is the responsibility of the instructor to narrow the students focus towards the intended injury.

CONDUCTING AN ITLS CASE-BASED COURSE

Coordination of a case-based ITLS course is similar to a non case-based course. The general guidelines Ohio ITLS has should be followed, they can be found in the policy and procedures manual.

This portion of the guide will assist you by discussing the differences and identifying special considerations you will need for the case-based course.

Should I conduct a case-based or traditional ITLS course?

This is the first question you should ask yourself. The decision to conduct a case-based or traditional course should be considered well in advanced. There are advantages and disadvantages with both courses; you should decide based on the needs of your students.

For example, the course you are conducting is for a group of experienced providers who have several years of emergency care and have been through ITLS several times. For this group of students a case-based course would be the likely decision vs. a class of EMT students where the traditional ITLS course may be more effective.

What information is considered "core" for an ITLS case-based course?

The core information for case-based ITLS and traditional ITLS is the same. In a case-based course lectures and skills stations are consolidated into "Small Group Technical Skills". They are designed to assure that the objectives of the lectures and skill stations are addressed during the course.

- Lectures
  - All lectures are core
- Skills Stations
  - Basic and Advanced Airway Management
  - Short Backboard/KED/Emergency Rapid Extrication
  - Traction Splints
  - Helmet Management/Logroll/Long Backboard
  - Chest Decompression/External Jugular IV/IO
  - Patient Assessment

What constitutes course completion for an ITLS case-based course?

There is no difference regarding completion of a case-based or traditional ITLS course. Refer to the Ohio ITLS policy and procedures manual for additional information.

What are the pass, fail and IP criteria for an ITLS case-based course?

There is no difference regarding pass-fail and IP criteria of a case-based or traditional ITLS course. Refer to the Ohio ITLS policy and procedures manual for additional information.

What is the retest policy for an ITLS case-based course?

There is no difference regarding the retest policy of a case-based or traditional ITLS course. Refer to the Ohio ITLS policy and procedures manual for additional information.

How do I schedule an ITLS case-based course?

There is no difference regarding scheduling a case-based or traditional ITLS course. Refer to the Ohio ITLS policy and procedures manual for additional information.

Selection of a Course Coordinator and Affiliate Faculty

The course coordinator and the affiliate faculty are the key to a successful program. These positions requires people who are organized and motivated since there is a considerable amount of work involved over several months. It is recommended that the course coordinator and affiliate faculty have experience with case-based learning or work with someone that does. Refer to the Ohio ITLS policy and procedures manual for additional information.

Selection of a Course Medical Advisor

It is recommended that the course medical advisor have experience with case-based learning or work with someone that does. Refer to the Ohio ITLS policy and procedures manual for additional information.

Selecting instructional faculty

The faculty for a case-based ITLS course should be of great consideration. When selecting instructors, remember that some instructors may not be able to teach case-based ITLS, you should make assignments that correspond to the instructor's abilities. With case-based ITLS it's important to assure the course assignments are sent out to the instructional faculty prior to the course so they can prepare for the course.

Instructors should all be consistent. Case-based ITLS will typically result in more questions and constancy issues regarding the instructors than in traditional classes. Address the way the cases should be conducted for the course and your expectations of the instructor's performance.

Equipment

There is no difference regarding the equipment of a case-based or traditional ITLS course. Refer to the Ohio ITLS policy and procedures manual for additional information.

Course agendas

Below you will find sample agendas for a 2 day case-based ITLS provider course and a 1 day case-based ITLS recertification course. You can modify the agendas to fit your needs and the needs of the course; however you must assure all core information is covered.

Example:

International Trauma Life Support
Provider Course Agenda

Day 1

0730-0800 Registration

0800-0815 Welcome/Course Overview

0815-0945 Scene Size Up/Evaluation/Management of Trauma Patients

0945-1215 Small Group Technical Skills (75 minutes each)
- Station (2): Airway Management/Thoracic Trauma
- Station (3): Shock Management
- Station (4): Spinal Skills/Immobilization

1215-1315 LUNCH

1315-1430 Small Group Technical Skills – continued (75 minutes each)
- Station (2): Airway Management/Thoracic Trauma
- Station (3): Shock Management
- Station (4): Spinal Skills/Immobilization

1430-1630 Patient Assessment – “Putting it all Together”
- Station (1): Rapid Patient Assessment

1630-1700 Q/A session

1700 Adjourn to Day 2

International Trauma Life Support
Provider Course Agenda

Day 2

0730-0800	Welcome
0800-0815	Review of Day One/Registration
0815-0915	Pediatric Trauma
0915-0945	Trauma in Pregnancy
0945-1000	Break
1000-1030	Trauma in the Elderly
1030-1100	Burn Trauma
1100-1145	Written Exam
1145-1245	LUNCH
1245-1300	Overview of Patient Assessment Stations
1300-1600	Evaluation Stations
1600	Course Evaluations

Example:

International Trauma Life Support
Provider Recertification Course Agenda

0730-0800 Registration

0800-0815 Welcome/Course Overview

0815-0945 Scene Size Up/Evaluation/Management of Trauma Patients

0945-1215 Small Group Technical Skills (75 minutes each)
- Station (2): Airway Management/Thoracic Trauma
- Station (3): Shock Management
- Station (4): Spinal Skills/Immobilization

1215-1315 LUNCH

1315-1430 Small Group Technical Skills – continued (75 minutes each)
- Station (2): Airway Management/Thoracic Trauma
- Station (3): Shock Management
- Station (4): Spinal Skills/Immobilization

1430-1630 Patient Assessment – “Putting it all Together”
- Station (1): Rapid Patient Assessment/Evaluation Stations

1630-1700 Written Exam

1700 Course Evaluations

SMALL GROUP TECHNICAL SKILLS

The small group technical skills are groups of like lectures and skills stations combined to make the “cases”.

RAPID PATIENT ASSESSMENT

Lectures – Assessment and Initial Management of the Trauma Patient (Chap 2)

Skills – Patient Assessment Skills (Chap 3)

Objectives

- **Cognitive Objectives**
    - Outline the steps in trauma assessment and management
    - Describe the ITLS Primary Survey
    - Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
    - Describe when the Initial Assessment can be interrupted
    - Describe when critical interventions should be made and where to make them
    - Identify which patients have critical conditions and how they should be managed
    - Describe the ITLS Secondary Survey
    - Describe the ITLS Ongoing Exam
- **Psychomotor Objectives**
    - ITLS primary survey
        - Correctly perform the ITLS primary survey
        - Identify within 2 minutes which patients require load-and-go
        - Describe when to perform critical interventions
    - ITLS secondary survey and ITLS ongoing exam
        - Correctly perform the secondary survey
        - Correctly perform the ongoing (reassessment) exam
        - Describe when to perform critical interventions
        - Demonstrate proper communication with medical direction
    - Assessment and management of the trauma patient
        - Demonstrate the proper sequence of rapid assessment and the management of the multiple-trauma patient

Key Points

- The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed
- Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR
- The step-by-step assessment scheme must be taught

- Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced
- Stress that the Ongoing Exam should be repeated any time the patient's condition worsens

Core Skills

- ITLS primary survey
    - ITLS for prehospital care providers sixth edition
        - Chapter 3, pg 46
- ITLS secondary survey
    - ITLS for prehospital care providers sixth edition
        - Chapter 3, pg 50
- ITLS ongoing exam
    - ITLS for prehospital care providers sixth edition
        - Chapter 3, pg 53

AIRWAY MANAGEMENT/THORACIC TRAUMA

Lectures – Initial Airway Management (Chap 4), Thoracic Trauma (Chap 6)

Skills – Airway Management Skills (Chap 5), Thoracic Trauma Skills (Chap 7)

Objectives

- **Cognitive Objectives**
    - Describe the anatomy and physiology of the respiratory system
    - Explain the importance of observation as it relates to airway control
    - Describe methods to deliver supplemental oxygen to the trauma patient
    - Briefly describe the indications, contraindications, advantages, and disadvantages of the following airway adjuncts:
        - Nasopharyngeal airways
        - Oropharyngeal airways
        - Bag-valve masks
        - Oxygen-powered, flow-restricted ventilation devices
        - Blind insertion airway devices
        - Endotracheal intubation
    - Describe the predictors of difficult mask ventilation and endotracheal intubation
    - Describe the Sellick maneuver
    - Describe the essential components of an airway kit
    - Identify the major symptoms of thoracic trauma
    - Describe the signs of thoracic trauma
    - State the immediate life-threatening thoracic injuries

    - Explain the pathophysiology and management of an open pneumothorax
    - Describe the clinical signs of a tension pneumothorax in conjunction with appropriate management
    - List three indications to perform emergency chest decompression
    - Explain the hypovolemic and respiratory compromise pathophysiology and management in massive hemothorax
    - Define flail chest in relation to associated physical findings and management
    - Identify the triad of physical findings in the diagnosis of cardiac tamponade
    - Explain the cardiac involvement and management associated with blunt injury to the chest
    - Summarize other injuries and their appropriate management
- **Psychomotor Objectives**
    - Suction the airway.
    - Insert a nasopharyngeal and oropharyngeal airway.
    - Ventilate using the pocket mask.
    - Ventilate using the bag-valve device.
    - Correctly use a pulse oximeter.
    - Describe the preparations necessary to perform endotracheal intubation.
    - Perform adult and infant orotracheal laryngoscopic intubation.
    - Perform nasotracheal intubation.
    - Use capnography to confirm correct tube placement.
    - Anchor the endotracheal tube.
    - Perform needed decompression of a tension pneumothorax

Key Points

- Review anatomy
- The differences in airway management of the trauma patient as opposed to the medical patient need to be clearly emphasized. Particular emphasis needs to be placed on stabilizing the cervical spine and maintaining stability of the cervical spine during airway maneuvers
- Stress that any movement, especially hyperextension of the cervical spine during airway maneuvers, may do great damage
- Continuous monitoring of the airway to be sure it remains patent. Stress that suction must be immediately available
- High-flow oxygen (as close to 100 percent as possible) must be provided to trauma patients. Discuss oxygen settings
- Remind students that the oropharyngeal airway is for use only in the unconscious patient with no gag reflex
- Review airway management in the conscious versus unconscious patient
- Stress that EMTs tend to inadvertently hyperventilate patients. The starting ventilatory rate should be about 8 breaths per minute. Use of pulse oximetry and capnography is recommended

- Discuss the "BOOTS" mnemonic as a predictor of the patient who will be difficult to ventilate with a bag-valve mask
- Review management of the prone patient and the patient with profuse upper airway bleeding
- Briefly review the anatomy of the chest, particularly the great vessels
- Emphasize load-and-go conditions and discuss why these conditions are so critical:
    - Massive hemothorax with shock: Explain that when massive hemothorax has occurred, as evidenced by dullness to percussion and diminished breath sounds in the base of the affected lung, massive hemorrhage has occurred into the chest with major blood vessel disruption and massive blood loss. If these patients are not rapidly taken to surgery, they usually die
    - Tension pneumothorax: Explain how the increased pressure in the chest reduces blood return to the heart, causing reduction in cardiac output, and thus producing shock. Stress the signs and symptoms of the tension pneumothorax (review the primary survey) and how critical it is not to leave out steps in the primary survey, which would prevent the identification of this problem
    - Penetrating chest trauma with shock: Explain that the penetrating chest injury with resulting evidence of shock is a load-and-go situation because of the many serious and potentially lethal conditions that may result
- Discuss the mechanics of airflow during inspiration and expiration. Discuss how the presence of an open wound into the pleural space decreases air movement through the tracheobronchial tree
- Discuss the pathophysiology of the flail chest and the management of this problem: Assisted ventilation and prevention of movement of the flail segment if it is decreasing air movement through the tracheobronchial tree. Stress that hand stabilization is usually adequate until the patient is moved into the ambulance. Point out that nasotracheal intubation (patient usually has a gag reflex) is the most effective method to stabilize the flail and oxygenate the patient
- A review of the mechanism of injury in chest trauma is appropriate. Stress the importance of anticipating serious chest trauma or the potential for life-threatening injury even before deterioration has occurred. This is particularly important in those patients with evidence of major chest trauma

Core Skills

- Suction the airway
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 79
- Insert a nasopharyngeal and oropharyngeal airway
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 79

- Ventilate using the pocket mask
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 80
- Ventilate using the bag-valve device
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 80
- Use of the pulse oximeter
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 80
- Preparation for endotracheal intubation
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 81
- Laryngoscopic orotracheal intubation
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 83
- Nasotracheal intubation
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 87
- Confirm placement of the endotracheal tube
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 89
- Use capnography to confirm correct tube placement.
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 92
- Properly anchor the endotracheal tube
    - ITLS for prehospital care providers sixth edition
        - Chapter 5, pg 93
- Chest decompression
    - ITLS for prehospital care providers sixth edition
        - Chapter 7, pg 115

Optional Skills

- Digital intubation (optional skill)
    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 327
- Transillumination (lighted stylet) (optional skill)
    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 330
- Translaryngel jet ventilation (TLJV) (optional skill)
    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 333
- Esophageal tracheal tube (Combitube) (optional skill)
    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 339
- King LT-D airway (optional skill)

    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 341
- Laryngeal mask airway (LMA) (optional skill)
    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 345
- Rapid sequence intubation (optional skill)
    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 351

SHOCK MANAGEMENT

Lectures – Shock Evaluation and Management (Chap 8), Abdominal Trauma (Chap 13), Extremity Trauma (Chap 14)

Skills – Fluid Resuscitation Skills (Chap 9), Extremity Trauma Skills (Chap 15)

Objectives

- Cognitive Objectives
    - List the four components of the vascular system necessary for normal tissue perfusion
    - Describe symptoms and signs of shock in the order that they develop, from the very least to the very worst
    - Describe the three common clinical shock syndromes
    - Explain the pathophysiology of hemorrhagic shock and compare it to the pathophysiology of neurogenic shock
    - Describe the management of the following:
        - Hemorrhage that can be controlled
        - Hemorrhage that cannot be controlled
        - Nonhemorrhagic shock syndromes
    - Discuss the use of hemostatic agents for uncontrolled extremity hemorrhage
    - Discuss the current indications for the use of IV fluids in the treatment of hemorrhagic shock
    - Identify the basic anatomy of the abdomen and explain how abdominal and chest injuries may be related
    - Differentiate between blunt and penetrating injuries and identify complications associated with each
    - Describe the treatment required for the patient with protruding viscera
    - Relate how injuries apparent on the exterior of the abdomen can damage underlying structures
    - Describe possible intraperitoneal injuries based on findings of history, physical examination, and mechanism of injury
    - Discuss advanced life support interventions for patients with abdominal injuries
    - Prioritize extremity trauma in the assessment and management of

life-threatening injuries.
    - Discuss the major complications and treatment of the following extremity injuries:
        - Fractures
        - Dislocations
        - Amputations
        - Open wounds
        - Neurovascular injuries
        - Sprains and strains
        - Impaled objects
        - Compartment syndrome
    - Estimate blood loss from pelvic and extremity fractures.
    - Discuss major mechanisms of injury, associated trauma, potential complications, and management of injury to the following areas:
        - Pelvis
        - Femur
        - Hip
        - Knee
        - Tibia/fibula
        - Clavicle and shoulder
        - Forearm and wrist
        - Hand or foot
- Psychomotor Objectives
    - Perform cannulation of the external jugular vein
    - Recite indications for the use of intraosseous infusion
    - Perform intraosseous infusion
    - Use length based resuscitation tape to estimate the weight of a child
    - Explain when to use a traction splint
    - Describe the complications of using a traction splint
    - Apply the most common tractions splints:
        - Thomas splint
        - Hare splint
        - Sager splint
    - Demonstrate pelvic stabilization techniques

Key Points

- Discuss the modern concept of “shock”: threat to normal cell function caused by diminished tissue perfusion and/or hypoxia.
- Discuss the pathophysiology of hemorrhagic shock including the classic signs and symptoms and their cause.
- Discuss the three shock syndromes:
    - Low volume (absolute hypovolemia)
    - High space (relative hypovolemia)
    - Mechanical (obstructive)
- Discuss the management of shock:

    - Posttraumatic hemorrhage
        - Exsanguinating external hemorrhage that can be controlled
        - Exsanguinating external hemorrhage that cannot be controlled
        - Exsanguinating internal hemorrhage
    - Nonhemorrhagic shock
        - Mechanical shock
        - High-space shock
- Discuss the use of tourniquets and hemostatic agents in the situation of exsanguinating hemorrhage.
- Stress that shock is, in general, recognized too late and treated insufficiently. Point out that delaying transport of a patient in shock is a critical mistake.
- Cover the anatomy of the abdomen.
- Stress the importance of the abdomen as regards morbidity and mortality associated with major trauma.
- Mention that a distended abdomen is a very late sign of hemorrhage within the abdomen.
- Mention that abdominal trauma with shock is a grim finding and must be rapidly managed.
- Discuss pelvic fractures and their potential for massive bleeding.
- Stress that the extremities MUST be examined for exsanguinating blood loss during the ITLS primary survey.
- The treatment of extremity trauma should be deemphasized in the patient with a load-and-go condition. In this scenario, traction splints should not be applied on scene; but rather, a long spine board should be employed initially. Other splints can be applied during transport if there is time.
- Estimated blood loss in major extremity fractures should be covered.
- The splints available for various purposes should be mentioned.
- Stress that the rescuer must note neurovascular status of the extremities before and after splinting procedures.
- Mention that when there is bleeding that cannot be controlled by pressure, use of a tourniquet and/or hemostatic agents is warranted.

Core Skills

- Cannulation of the external jugular vein
    - ITLS for prehospital care providers sixth edition
        - Chapter 9, pg 137
- Intraosseous infusion
    - ITLS for prehospital care providers sixth edition
        - Chapter 9, pg 138
- Length-based resuscitation tapes
    - ITLS for prehospital care providers sixth edition
        - Chapter 9, pg 140
- Traction splints

    - ITLS for prehospital care providers sixth edition
        - Chapter 15, pg 230
- Pelvic stabilization techniques
    - ITLS for prehospital care providers sixth edition
        - Chapter 15, pg 234

Optional Skills

- Adult intraosseous infusion (optional skill)
    - ITLS for prehospital care providers sixth edition
        - Appendix A, pg 348

SPINAL SKILLS/IMMOBILIZATION

Lectures – Head Trauma (Chap 10), Spinal Trauma (Chap 11)

Skills – Spine Management Skills (Chap 12)

Objectives

- Cognitive Objectives
    - Describe the anatomy of the head and brain.
    - Describe the pathophysiology of traumatic brain injury.
    - Explain the difference between primary and secondary brain injury.
    - Describe the mechanisms for the development of secondary brain injury.
    - Describe the assessment of the patient with a head injury.
    - Describe the prehospital management of the patient with a head injury.
    - Recognize and describe the management of the cerebral herniation syndrome.
    - Identify potential problems in the management of the patient with a head injury.
    - Explain the normal anatomy and physiology of the spinal column and spinal cord.
    - Define *spinal motion restriction* (SMR) and explain why this term is preferred to the term *spinal immobilization.*
    - Describe mechanisms of injury that indicate SMR may be required.
    - Describe the process of SMR from extrication through transportation, including airway maintenance.
    - Explain the difference between Emergency Rescue and Rapid Extrication.
    - Describe history and assessment criteria that identify patients who do not need spinal immobilization.
    - Give examples of special situations for which SMR techniques may need to be altered.
    - Using the clinical evaluation, differentiate neurogenic shock from hemorrhagic shock.

- Psychomotor Objectives
    - Describe the essential components of the spinal motion restriction (SMR) system
    - Explain when to use SMR
    - Perform SMR with a short backboard
    - Perform log-rolling of a patient onto a long backboard
    - Properly secure a patient to a long backboard
    - Perform SMR on a patient from a standing position
    - Stabilize the head and neck when a neutral position cannot be safely attained
    - Perform a rapid extrication
    - Explain when helmets should and should not be removed from an injured patient
    - Properly remove a motorcycle helmet
    - Demonstrate proper stabilization of the neck in patients who are wearing shoulder pads and helmets

Key Points

- Cover the anatomy.
- Cover the physiology of the brain and explain why hyperventilation is no longer recommended except in cases of herniation syndrome.
- Emphasize the control of the airway in the patient with an altered level of consciousness. Stress that suction must be available at all times.
- Stress that a patient with a serious head injury (Glasgow Coma Score of 8 or less) will not tolerate hypoxia or hypotension. In this situation do not allow the blood pressure to get below 100–110 systolic.
- Mention that prehospital providers tend to inadvertently hyperventilate head-injured patients. Stress that, if possible, capnography should be used to prevent inadvertent hyperventilation.
- Mention the aspects of the Glasgow Coma Score and that each part should be recorded, not just the total score. This score should always be recorded if there is altered mental status.
- Stress indications for hyperventilation.
- Cover the anatomy of the spine briefly.
- Reinforce that any trauma patient who has an altered level of consciousness must be presumed to have a cervical spine injury until proven otherwise. Appropriate precautions must be taken.
- Stress that not only must the cervical spine be protected, but the entire spine, including the lumbar and dorsal spine.
- Briefly discuss the signs, symptoms, and treatment of neurogenic shock.
- Stress documentation of the brief neurological exam (movement and sensation of hands and feet) before and after extrication or movement of the patient with a suspected spinal injury.
- Stress that full SMR includes cervical collar, head immobilizer, and appropriate strapping applied to the patient on a long spine board.

- Stress that cervical collars alone offer little to no protection of the cervical spine. ITLS teaches that SMR is manually maintained by a team member until the patient is secured to the long spine board.
- Emphasize that SMR on a long spineboard MANDATES airway protection by the rescuer due to the patient being prevented from protecting himself.
- Discuss the indications for rapid extrication (without using short boards or KED-type devices). Primary survey of the patient identifies a condition that requires immediate intervention that cannot be done in the entrapped area, such as
    - Airway obstruction that cannot be relieved by jaw thrust or finger sweep
    - Cardiac or respiratory arrest
    - Chest or airway injuries requiring ventilation or assisted ventilation
    - Deep shock or bleeding that cannot be controlled
- Note that there are other situations that are so desperate that you may not have time to use any technique and emergency rescue is warranted to pull the patient to safety. The need for emergency rescue is identified during the scene survey with circumstances that may immediately endanger the patient and the rescuers.
    - Fire or immediate danger of fire
    - Danger of explosion
    - Rapidly rising water
    - Structure in danger of collapse
    - Continuing toxic exposure
- Mention that short backboard type SMR devices may be difficult to apply and ineffective in pregnant and very obese patients.
- Briefly clarify management of unusual circumstances, such as
    - Closed space rescue
    - Water rescue
    - Prone and standing patients
    - Pediatrics
    - Geriatrics
    - Helmet removal (stress that studies have found that rescue scissors will not efficiently remove face masks)
    - Obese patients
    - Neck or face wounds

Core Skills

- SMR using a short board
    - ITLS for prehospital care providers sixth edition
        - Chapter 12, pg 184
- Emergency rescue and rapid extrication
    - ITLS for prehospital care providers sixth edition
        - Chapter 12, pg 191
- Log-rolling the supine patient
    - ITLS for prehospital care providers sixth edition

        - Chapter 12, pg 194
- Log-rolling a prone patient who has an adequate airway
    - ITLS for prehospital care providers sixth edition
        - Chapter 12, pg 197
- Applying and securing a long board to a standing patient
    - ITLS for prehospital care providers sixth edition
        - Chapter 12, pg 198
- Helmet removal
    - ITLS for prehospital care providers sixth edition
        - Chapter 12, pg 199

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Small Group Technical Skills 1
Rapid Patient Assessment

Case 1

50-year-old pedestrian was struck by an SUV at low speed, the vehicle rolled over the patient's chest and abdomen

Case 2

60-year-old patient involved in side impact MVC, passenger side. Patient was the restrained passenger, driver uninjured

Case 3

40-year-old patient pinned between forklift and wall. The forklift driver has moved the lift

Case 4

36-year-old patient fell approximately fifty-feet when the bungee cord failed

Case 5

24-year-old patient slipped on ice while walking down stairs, fell backwards and impaled on iron fence

Case 6

17-year-old patient found lying in an alley following an assault

Case 7

60-year-old patient is found in a ditch after striking a parked buggy at high speed.

Case 8

19-year-old patient was involved in a multi vehicle pile up on his 4-wheeler while riding with friends

Case 9

22-year-old patient was shot in the chest following a chase by the police

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Rapid Patient Assessment – Case 1

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 50-year-old patient was struck by an SUV at low speed, the vehicle rolled over the patient's chest and abdomen **Scene Size Up** There is a crowd gathering; law enforcement on scene; no danger; no other victims **Injuries** • Flail chest - anterior, right side • Abdominal injury - possible spleen • Humerus fracture - right side **Patient Information** Awake, complaining of difficulty breathing and pain in chest & abdomen	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing**: rapid and labored, decreased lung sounds on the right **Circulation**: rapid and bounding carotid pulse with weak radial, skin is pale and cool, no external hemorrhage noted **Rapid Trauma Survey** **Chest**: unequal chest rise, tender, bruising, crepitus and diminished breath sounds on the right side **Abdomen**: tender, non-distended, firm with bruising on the left side **Extremities**: crepitus noted right upper arm **Detailed/Ongoing Exam** **LOC:** decreased **Breathing**: poor air movement **Abdomen**: distension noted **Vital Signs**: BP 86/40, P 142, R 32 labored **History** S - tire tracks noted on chest A - none M - none P - none L - 1 hour ago E - "I was crossing the street".	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 2

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 60-year-old patient involved in side impact MVC, passenger side. Patient was the restrained passenger, driver uninjured **Scene Size Up** Patient still in vehicle; no danger; no other victims **Injuries** • Pelvic fracture • Femur fracture - right side • Open tib/fib fracture - right side **Patient Information** Alert, complaining of pain in hip and right leg	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** rapid with clear bilateral breath sounds **Circulation:** rapid and present at carotid and radial, skin pale, external hemorrhage noted right leg **Rapid Trauma Survey** **Pelvis:** unstable and painful to palpitation **Extremities:** open right femur fracture, moderate bleeding; open right tib/fib fracture, minor bleeding **Detailed/Ongoing Exam** **Breathing:** improves with treatment **Vital Signs:** BP 104/72, P 126, R 30 shallow **History** S - Complaining of pain A - None M - NTG P - Angina L - Breakfast E - "I was napping and awoke when we got hit"	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 3

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 40-year-old patient pinned between forklift and wall. The forklift driver has moved the lift **Scene Size Up** Patient found sitting against wall; no danger; no other victims **Injuries** • Lumbar fracture • Intra-abdominal injury **Patient Information** Awake, complaining of back and abdominal pain	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** rapid and labored **Circulation:** rapid, thready radial pulse; skin pale, cool **Rapid Trauma Survey** **Abdomen:** tender, distended **Extremities:** multiple abrasions to lower extremities **Back:** deformity noted lumbar region **Neuro:** diminished lower extremity motor function **Detailed/Ongoing Exam** **LOC:** decreasing **Circulation:** rapid carotid, loss of radial pulses **Abdomen:** Increased distension **Vital Signs:** BP 70/40, P 136, R 32 **History** S - Pain A - None M - Insulin P - Diabetes L - Unknown E - "I was walking across the loading dock when the lift pinned me to the wall"	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requiring load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 4

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 36-year-old patient fell approximately fifty-feet when the bungee cord failed **Scene Size Up** Large crowd gathered in area; no danger; no other victims **Injuries** • Closed head injury • Pulmonary contusion • Multiple extremity fractures **Patient Information** Unresponsive	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** unresponsive **Airway:** sonorous respirations **Breathing:** slow, shallow; lung sounds bilaterally diminished **Circulation:** rapid, carotid only; skin pale, cool, diaphoretic; obvious external hemorrhage noted **Rapid Trauma Survey** **Head:** bleeding and bruising behind left ear; multiple contusions **Chest:** anterior bruising; use of accessory muscles **Extremities:** open right humerus Fx; open right femur Fx; open right tib/fib Fx **Detailed/Ongoing Exam** **Neuro:** posturing **Pupils:** dilated, slow to react **Vital Signs:** BP 60/30, P 140, R 8 **History** S - unobtainable A - unobtainable M - unobtainable P - unobtainable L - unobtainable E - unobtainable	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 5

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 24-year-old patient slipped on ice while walking down stairs, fell backwards and impaled on iron fence **Scene Size Up** Patient is impaled on fence; no danger; no other victims **Injuries** • Hemothorax - left side • Spleen punctured • Open pneumothorax - posterior left side **Patient Information** Awake complaining of difficulty breathing and abdominal pain; can only be removed from fence by cutting, section of fence will remain inside the patient	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** rapid, shallow; diminished on left **Circulation:** rapid, present at carotid and radial; skin pale, cold, slightly diaphoretic **Rapid Trauma Survey** **Chest:** impaled fence left posterior chest; downward angle; unknown depth **Abdomen:** tender to palpitation; distended LUQ **Detailed/Ongoing Exam** **LOC:** decreasing **Breathing:** diminished breath sounds on left **Abdomen:** tender to palpitation; distended LUQ **Vital Signs:** BP 100/70, P 124, R 28 labored, diminished on left **History** S - bleeding at puncture site A - none M - none P - none L - unknown E - “I slipped on the ice”	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient’s condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 6

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 17-year-old patient found lying in an alley following an assault **Scene Size Up** Law enforcement on scene, assures you area is clear of danger; no other victims **Injuries** • Closed head injury • Evisceration • Compound radius fracture - right **Patient Information** Confused, combative, very belligerent to everyone	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** confused, combative **Airway:** broken teeth, blood **Circulation:** external hemorrhage noted **Rapid Trauma Survey** **Head:** bruising to right temporal area and both eyes **Neck:** swelling to anterior neck **Chest:** multiple bruises and abrasions **Abdomen:** evisceration noted, slight bleeding **Extremities:** open fracture right forearm; multiple abrasions **Detailed/Ongoing Exam** **Vital Signs:** BP 100/74, P 80, R 22 **History** S - multiple abrasions A - unknown M - unknown P - unknown L - beer E - assaulted	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 7

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 60-year-old patient is found in a ditch after striking a parked buggy at high speed **Scene Size Up** Buggy is crushed; victim drove car into a 6 foot ditch; ejected through windshield; major damage to steering wheel; no danger; no other victims **Injuries** • Spinal injury with spinal shock • Penumothorax - left • Bilateral femur fractures **Patient Evaluation** Unresponsive	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** unresponsive **Airway:** partially obstructed, gurgling respirations **Breathing:** rapid, labored; decreased left side **Circulation:** rapid, present at carotid only **Rapid Trauma Survey** **Neck:** posterior deformity at the C-5 level **Chest:** decreased chest wall movement **Extremities:** bilateral femur deformities **Detailed/Ongoing Exam** **Vital Signs:** BP 84/52, P 60, R 30 **History** S - unobtainable A - unobtainable M - unobtainable P - medic alert bracelet: diabetes L - unobtainable E - unobtainable	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 8

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 19-year-old patient was involved in a multi vehicle pile up on his 4-wheeler while riding with friends **Scene Size Up** Race is stopped; no danger; no other victims **Injuries** • Posterior hip dislocation - right • Compound tib/fib fracture - right • Abdominal bruising - right **Patient Information** Yelling in pain, and doesn't the want body armor cut off	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Circulation:** rapid rate at carotid and radial; slightly pale; slight external hemorrhage noted **Rapid Trauma Survey** **Abdomen:** tire tracks, bruising, tender to palpitation **Pelvis:** deformity on right **Extremities:** deformity and minor bleeding right lower leg **Detailed/Ongoing Exam** **Abdomen:** tender, slight distended **Extremities:** unable to straighten right leg at the hip **Vital Signs:** BP 90/50, P 130, R 16 **History** S - pain A - morphine M - none P - previous hip dislocations L - breakfast E - "Just got tangled up with the driver in front of me".	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Rapid Patient Assessment – Case 9

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 22-year-old patient was shot in the chest following a chase by the police **Scene Size Up** Police surrounding patient, lying on ground; no danger; no other victims **Injuries** • Open pneumothorax - right • Hemothorax - right **Patient Information** Awake, complaining of pain & difficulty breathing	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** labored, increased rate **Circulation:** rapid pulse present at the neck only; skin pale, cool **Rapid Trauma Survey** **Neck:** flat neck veins **Chest:** bubbling from wound, decreased breath sounds on right **Detailed/Ongoing Exam** **Breathing:** absent breath sounds on right **Vital Signs:** BP 70/40, P 130, R 36 **History** S - pain A - none M - none P - none L - unknown E - shot by police after robbing a store	• Explain the relationship of time to patient survival and how this affects our actions at the scene. • Explain the steps of the scene size-up and the importance of each step. • The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed • Point out that the Initial Assessment is interrupted only for airway obstruction, the scene becomes too dangerous, or the need to perform CPR • The step-by-step assessment scheme must be taught • Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. The ten-minute rule must be reinforced • Stress that the Ongoing Exam should be repeated any time the patient's condition worsens	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to open airway and address any issues • Failure to recognize breathing issues • Failure to recognize circulation issues • Failure to properly perform rapid trauma survey • Failure to identify life threatening injuries • Failure to properly perform secondary survey • Failure to properly perform ongoing exam

Cognitive Objectives

- Outline the steps in trauma assessment and management
- Describe the ITLS Primary Survey
- Describe the Initial Assessment and explain how it relates to the ITLS Rapid Trauma Survey and the Focused Exam
- Describe when the Initial Assessment can be interrupted
- Describe when critical interventions should be made and where to make them
- Identify which patients have critical conditions and how they should be managed
- Describe the ITLS Secondary Survey
- Describe the ITLS Ongoing Exam

Psychomotor Objectives

- ITLS primary survey
  - o Correctly perform the ITLS primary survey
  - o Identify within 2 minutes patients requireing load-and-go
  - o Describe when to perform critical interventions
- ITLS secondary survey and ITLS ongoing exam
  - o Correctly perform the secondary survey
  - o Correctly perform the ongoing (reassessment) exam
  - o Describe when to perform critical interventions
  - o Demonstrate proper communication with medical direction

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Small Group Technical Skills 2
Airway Management/Thoracic Trauma

Case 1
17-year-old patient fell off of a skateboard at a local skate park

Case 2
17-year-old patient fell off roof while trying to sneak into girlfriend's/boyfriend's house

Case 3
30-year-old patient involved in a head on collision with a tractor on the highway

Case 4
21-year-old patient was stabbed in the back at a local bar

Case 5
24-year-old patient involved in a car vs. motorcycle MVC

Case 6
56-year-old patient lost control of motor home and drove through greenhouse area at Wal-Mart

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Airway Management/Thoracic Trauma – Case 1

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 17-year-old patient fell off of a skateboard at a local skate park **Scene Size Up** Patient is found at the bottom of a ramp without a helmet; no danger: no other victims **Injuries** • Airway compromise **Patient Evaluation** Patient is initially unresponsive, become violently combative as C-collar is applied, begin vomiting	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** unresponsive **Breathing:** normal rate & depth **Circulation:** rapid radial & carotid **Rapid Trauma Survey** **Head:** blood in hair **Extremities:** deformed right forearm with weak pulse **History** S - as above A - unknown M - unknown P - unknown L - unknown E - lost balance & struck head on top of ramp	• Review anatomy • Particular emphasis needs to be placed on stabilizing the cervical spine and maintaining stability of the cervical spine during airway maneuvers • Stress that any movement, especially hyperextension of the cervical spine during airway maneuvers, may do great damage • Continuous monitoring of the airway to be sure it remains patent. • High-flow oxygen must be provided to trauma patients. Discuss oxygen settings • Oropharyngeal airway is for use only in the unconscious patient with no gag reflex • Review airway management in the conscious versus unconscious patient • Stress that EMTs tend to inadvertently hyperventilate patients. The starting ventilatory rate should be about 8 breaths per minute. Use of pulse oximetry and capnography is recommended • Discuss the "BOOTS" mnemonic as a predictor of the patient who will be difficult to ventilate with a bag-valve mask • Review management of the prone patient and the patient with profuse upper airway bleeding	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to provide an open airway with a jaw thrust maneuver • Failure to recognize the potential airway compromise • Failure to manage airway

Cognitive Objectives

- Describe the A&P of the respiratory system
- Explain the importance of observation as it relates to airway
- Describe methods to deliver supplemental oxygen
- Briefly describe the indications and contraindications and the advantages and disadvantages of the following:
  - Nasopharyngeal, oropharyngeal airways, bag-valve masks, flow-restricted oxygen-powered ventilation devices, endotracheal intubation
- Describe the predictors of difficult BVM and intubation
- Describe the Sellick maneuver
- Describe the essential components of an airway kit

Psychomotor Objectives

- Perform scene size up and initial assessment
- Suction the airway
- Insert nasopharyngeal and oropharyngeal airway
- Use the bag-valve mask
- Properly prepare the endotracheal intubation
- Perform laryngoscopic orotracheal intubation
- Perform nasotracheal intubation
- Confirm placement of the endotracheal tube
- Use capnography to confirm correct tube placement
- Anchor the endotracheal tube

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Airway Management/Thoracic Trauma – Case 2

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 17-year-old patient fell off roof while trying to sneak into girlfriend's/boyfriend's **Scene Size Up** Patient fell from the second story of a house onto grass; irate father in area; no other victims **Injuries** • Flail Chest - left side **Patient Evaluation** Awake & alert and complaining of severe respiratory distress and wants to see girlfriend.	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** rapid & labored with poor air movement **Circulation:** rapid rate **Rapid Trauma Survey** **Breathing:** increasing air hunger; decreased breath sounds on left **Chest:** paradoxical, crepitus and pain on left side **History** S - respiratory distress A - none M - none P - none L - beer and spaghetti E - climbing on roof	• A review of the mechanism of injury in chest trauma is appropriate. Stress the importance of anticipating serious chest trauma or the potential for life-threatening injury even before deterioration has occurred. This is particularly important in those patients with evidence of major chest trauma • Briefly review the anatomy of the chest, particularly the great vessels. • Discuss the pathophysiology of the flail chest and the management of this problem: o Assisted ventilation and prevention of movement of the flail segment if it is decreasing air movement through the tracheobronchial tree. o Stress that hand stabilization is usually adequate until the patient is moved into the ambulance. o Point out that nasotracheal intubation (patient usually has a gag reflex) is the most effective method to stabilize the flail and oxygenate the patient	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize flail segment • Failure to properly treat flail segment

Cognitive Objectives

- Identify the major symptoms of thoracic trauma
- Describe the signs of thoracic trauma
- State the immediate life-threatening thoracic injuries
- Define flail chest in relation to associated physical findings and management

Psychomotor Objectives

- Perform scene size up and initial assessment

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Airway Management/Thoracic Trauma – Case 3

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 30-year-old patient involved in a head on collision with a tractor on the highway **Scene Size Up** Patient is found unrestrained and pinned in the drivers seat of the vehicle; significant front end damage is noted on the vehicle; no other victims; no danger **Injuries** • Tension pneumothorax - left side **Patient Evaluation** Respond to verbal stimuli, speaking in broken sentences	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** confused, lethargic **Breathing:** rapid, labored, shallow **Circulation:** rapid, weak radial **Rapid Trauma Survey** **Neck:** slight JVD **Chest:** diminished breath sounds on left, bruising noted **History** S - painful breathing A - none M - none P - none L - none E - collision with tractor	• A review of the mechanism of injury in chest trauma is appropriate. Stress the importance of anticipating serious chest trauma or the potential for life-threatening injury even before deterioration has occurred. This is particularly important in those patients with evidence of major chest trauma • Briefly review the anatomy of the chest, particularly the great vessels. • Emphasize load-and-go conditions and discuss why these conditions are so critical: o Tension pneumothorax: Explain how the increased pressure in the chest reduces blood return to the heart, causing reduction in cardiac output, and thus producing shock. Stress the signs and symptoms of the tension pneumothorax and how critical it is not to leave out steps in the primary survey which would prevent the identification of this problem. • Discuss the management of shock: o Nonhemorrhagic shock ▪ Mechanical shock	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize tension pneumothorax • Failure to properly decompress tension pneumothorax

Cognitive Objectives

- Identify the major symptoms of thoracic trauma
- Describe the signs of thoracic trauma
- State the immediate life-threatening thoracic injuries
- Describe the clinical signs of a tension pneumothorax in conjunction with appropriate management
- List three indications to perform emergency chest decompression

Psychomotor Objectives

- Perform scene size up and initial assessment
- Describe the indications for an emergency decompression of a tension pneumothorax
- Explain the complications of needed decompression of a tension pneumothorax
- Perform needed decompression of a tension pneumothorax

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Airway Management/Thoracic Trauma – Case 4

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 21-year-old patient was stabbed in the back at a local bar **Scene Size Up** Patient is found on the dance floor; law enforcement is on scene; bar is cleared of patrons **Injuries** • Open pneumothorax - right side **Patient Evaluation** Alert & uncooperative, complaining of difficulty breathing with signs of air hunger	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** rapid & labored **Circulation:** rapid, weak radial **Skin:** diaphoretic, cool, clammy **Rapid Trauma Survey** **Breathing:** rapid & labored, decreased breath sounds on right **Circulation:** rate increasing **Skin:** diaphoretic, cool, clammy **Back:** 2 puncture wounds with moderate bleeding & some bubbling with respirations **History** S - 2 stab wounds A - none M - none P - none L - beer E - "I was dancing and minding my own business".	• A review of the mechanism of injury in chest trauma is appropriate. Stress the importance of anticipating serious chest trauma or the potential for life-threatening injury even before deterioration has occurred. This is particularly important in those patients with evidence of major chest trauma • Briefly review the anatomy of the chest, particularly the great vessels. • Emphasize load-and-go conditions and discuss why these conditions are so critical: o Penetrating chest trauma with shock: Explain that the penetrating chest injury with resulting evidence of shock is a load-and-go situation because of the many serious and potentially lethal conditions that may result. • Discuss the mechanics of airflow during inspiration and expiration. • Discuss how the presence of an open wound into the pleural space decreases air movement through the tracheobronchial tree.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize open pneumothorax • Failure to properly manage an open pneumothorax

Cognitive Objectives
- Identify the major symptoms of thoracic trauma
- Describe the signs of thoracic trauma
- State the immediate life-threatening thoracic injuries
- Explain the pathophysiology and management of an open pneumothorax

Psychomotor Objectives
- Perform scene size up and initial assessment

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Airway Management/Thoracic Trauma – Case 5

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 24-year-old patient involved in a car vs. motorcycle MVC **Scene Size Up** Patient found lying on the roadway with a helmet; Patient flew forward off the motorcycle striking the car & pavement; no danger; no other victims **Injuries** • Massive hemothorax - left side **Patient Evaluation** Lethargic, complaining of pain on left side of chest & difficulty breathing	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** lethargic but appropriate **Breathing:** rapid, labored; poor air movement on left **Circulation:** rapid with weak radial **Rapid Trauma Survey** **Neck:** flat neck veins **Chest:** decreased breath sounds on left, bruised chest on left **History** S - as above A - PCN M - none P - none L - breakfast E - “That car pulled out if front of me”.	• A review of the mechanism of injury in chest trauma is appropriate. Stress the importance of anticipating serious chest trauma or the potential for life-threatening injury even before deterioration has occurred. This is particularly important in those patients with evidence of major chest trauma • Briefly review the anatomy of the chest, particularly the great vessels. • Emphasize load-and-go conditions and discuss why these conditions are so critical: o Massive hemothorax with shock: Explain that when massive hemothorax has occurred, as evidenced by dullness to percussion and diminished breath sounds in the base of the affected lung, massive hemorrhage has occurred into the chest with major blood vessel disruption and massive blood loss. If these patients are not rapidly taken to surgery they usually die.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize Massive hemothorax • Failure to properly manage an Massive hemothorax

Cognitive Objectives
- Identify the major symptoms of thoracic trauma
- Describe the signs of thoracic trauma
- State the immediate life-threatening thoracic injuries
- Explain the hypovolemic and respiratory compromise pathophysiology and management in massive hemothorax

Psychomotor Objectives
- Perform scene size up and initial assessment

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Airway Management/Thoracic Trauma – Case 6

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 56-year-old patient lost control of motor home and drove through greenhouse area at Wal-Mart **Scene Size Up** Vehicle is resting against a concrete wall; steering wheel is broken and bent; no danger; no other victims **Injuries** • Cardiac tamponade **Patient Evaluation** Awake and talking, does not remember accident. Become unconscious as transport begins.	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** confused **Breathing:** slow **Circulation:** slow, present at neck only **Rapid Trauma Survey** **LOC:** responds to pain **Breathing:** slow **Circulation:** carotid only **Neck:** distended neck veins **Head:** contusions **Chest:** left midsternal puncture wound, muffled heart tones **History** S - confused A - sulfa M - cardizem P - A-fib L - unknown E - unknown	• A review of the mechanism of injury in chest trauma is appropriate. Stress the importance of anticipating serious chest trauma or the potential for life-threatening injury even before deterioration has occurred. This is particularly important in those patients with evidence of major chest trauma • Briefly review the anatomy of the chest, particularly the great vessels. • Discuss the management of shock: o Nonhemorrhagic shock ▪ Mechanical shock	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize cardiac tamponade • Failure to properly manage an cardiac tamponade

Cognitive Objectives
- Identify the major symptoms of thoracic trauma
- Describe the signs of thoracic trauma
- State the immediate life-threatening thoracic injuries
- Identify the triad of physical findings in the diagnosis of cardiac tamponade
- Explain the cardiac involvement and management associated with blunt injury to the chest

Psychomotor Objectives
- Perform scene size up and initial assessment

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Small Group Technical Skills 3
Shock Management

Case 1
29-year-old patient fell approximately 25 feet from the roof of a two story house

Case 2
30-year-old patient has been stabbed during an altercation

Case 3
16-year-old patient struck tree on ATV and flips over handlebars striking tree

Case 4
30-year-old patient takes the wrong path while skiing, tumbling over a cliff and landing approximately 45 feet from the edge of the cliff

Case 5
30-year-old patient fell two stories from scaffold, patient landed on his/her feet

Case 6
28-year-old patient stabbed as a result of an argument in a bar

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Shock Management – Case 1

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 29-year-old patient fell approximately 25 feet from the roof of a two story house **Scene Size Up** Patient is lying on the ground near the house wearing a hard hat; no danger; no other victims **Injury** • Intra-abdominal Bleed - RUQ **Patient Information** Responsive to verbal stimuli, complaining of severe abdominal pain RUQ	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** responds to verbal **Breathing:** rapid rate **Circulation:** rapid rate carotid and radial, skin is slightly pale **Rapid Trauma Survey** **LOC:** responds to pain **Breathing:** rapid rate **Circulation:** rapid rate carotid pulse only, skin is pale cool and diaphoretic **Abdomen:** tender to palpation in RUQ, some distension noted **History** S - RUQ abdominal pain A - NKDA M - none P - none L - lunch E - "I lost my balance and fell off the roof"	• Discuss the modern concept of "shock" • Discuss the pathophysiology of hemorrhagic shock • Shock is generally recognized too late and treated insufficiently; delaying transport of a patient in shock is a critical mistake. • Discuss the management of shock o Exsanguinating internal hemorrhage • Cover the anatomy of the abdomen. • Stress the importance of the abdomen as regards morbidity and mortality associated with major trauma. • Mention that a distended abdomen is a very late sign in exsanguination within the abdomen. • Mention that abdominal trauma with shock is a grim finding and must be rapidly managed.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to quickly recognize intra-abdominal bleeding • Failure to properly manage intra-abdominal bleeding

Cognitive Objectives

- Identify the basic anatomy of the abdomen and explain how abdominal and chest injuries may be related
- Relate how injuries apparent on the exterior of the abdomen can damage underlying structures
- Differentiate between blunt and penetrating injuries and identify complications associated with each
- Describe possible intra-abdominal injuries based on findings of history, physical examination, and mechanism of injury
- Discuss advanced life support interventions for patients with abdominal injuries

Psychomotor Objectives

- Perform scene size up and initial assessment
- Perform rapid trauma survey

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Shock Management – Case 2

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 30-year-old patient has been stabbed during an altercation **Scene Size Up** Assailant has left scene, law enforcement present (if requested by team leader); no danger; no other victims **Injury** • Abdominal Evisceration - left side **Patient Information** Awake & agitated, complaining of abdominal pain	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** labored with increased rate **Circulation**: rapid and bounding carotid pulse with weak radial, skin is pale and cool, slight external hemorrhage noted with stab wound **Rapid Trauma Survey** **Breathing:** labored **Abdomen:** evisceration, slight external hemorrhage noted **History** S - laceration to abdomen A - none M - none P - none L - lunch E - “Someone came up and stabbed me.”	• Discuss the modern concept of “shock” • Discuss the pathophysiology of hemorrhagic shock • Shock is generally recognized too late and treated insufficiently; delaying transport of a patient in shock is a critical mistake. • Discuss the management of shock o Exsanguinating external hemorrhage that can be controlled o Exsanguinating external hemorrhage that cannot be controlled	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to quickly recognize evisceration • Failure to properly manage evisceration

Cognitive Objectives
- Differentiate between blunt and penetrating injuries and identify complications associated with each
- Discuss advanced life support interventions for patients with abdominal injuries
- Describe the treatment required for the patient with protruding viscera

Psychomotor Objectives
- Perform scene size up and initial assessment
- Perform rapid trauma survey

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Shock Management – Case 3

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 16-year-old patient struck tree on ATV and flips over handlebars striking tree **Scene Size Up** Patient is found lying next to the tree; the patient has removed the helmet; no danger; no other victims **Injury** • Severe Shock Decompensating **Patient Information** Alert and disoriented, complaining of abdominal pain. You become confused & lethargic during initial assessment	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** slightly labored, rate increased **Circulation**: rapid and bounding carotid pulse with weak radial, skin is pale and cool, no external hemorrhage noted **Rapid Trauma Survey** **Circulation:** increasing rate, no radial, weak carotid **Abdomen:** tender & distended, painful on palpitation **Extremities:** abrasions, no PMS in lower extremities **History** S - pain A - none M - none P - appendectomy L - 6 hours prior E - "I was distracted and didn't see the tree".	• Discuss the modern concept of "shock" • Discuss the pathophysiology of hemorrhagic shock • Shock is generally recognized too late and treated insufficiently; delaying transport of a patient in shock is a critical mistake. • Discuss the three shock syndromes: o Low volume (absolute hypovolemia) o High space (relative hypovolemia) o Mechanical (obstructive)	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to quickly recognize decompensating shock • Failure to properly manage decompensating shock

Cognitive Objectives
- Discuss the current indications for the use of IV fluids in the treatment of hemorrhagic shock

Psychomotor Objectives
- Perform scene size up and initial assessment
- Perform rapid trauma survey
- Perform cannulation of the external jugular vein

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Shock Management – Case 4

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 30-year-old patient takes the wrong path while skiing, tumbling over a cliff and landing approximately 45 feet from the edge of the cliff **Scene Size Up** Patient is found lying in the snow at the bottom of the cliff; no danger; no other victims **Injury** • Pelvic Fracture **Patient Evaluation** Responsive to pain	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** responsive to pain **Airway:** snoring respirations **Circulation**: rapid weak radial and carotid pulses, skin is pale and cool, no external hemorrhage noted **Rapid Trauma Survey** **LOC:** continued unresponsive **Pelvis:** crepitus on palpitation, patient responds to deep painful stimuli **History** S - unobtainable A - unobtainable M - unobtainable P - unobtainable L - unobtainable E - unobtainable	• Discuss the modern concept of “shock” • Discuss the pathophysiology of hemorrhagic shock • Shock is generally recognized too late and treated insufficiently; delaying transport of a patient in shock is a critical mistake. • Discuss pelvic fractures and their potential for massive bleeding.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to quickly recognize pelvic fracture • Failure to properly manage pelvic fracture

Cognitive Objectives

- Prioritize extremity trauma in the assessment and management of life-threatening injuries
- Discuss the major complications and treatment of the following extremity injuries:
  - o Fractures
- Estimate blood loss from pelvic fractures
- Discuss major mechanisms of injury, associated trauma, potential complications, and management of injury to the following areas:
  - o Pelvis

Psychomotor Objectives

- Perform scene size up and initial assessment
- Perform rapid trauma survey

o Demonstrate pelvic stabilization techniques

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Shock Management – Case 5

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 30-year-old patient fell two stories from scaffold, patient landed on his/her feet **Scene Size Up** Patient is found at the base of the scaffold; no danger; no other victims **Injury** • Bilateral compound femur fractures **Patient Information** You are awake and answering questions, complaining of pain in both legs; after rapid trauma survey you become unconscious	***All within normal limits or unchanged unless noted*** **Initial Assessment** **Breathing:** slightly labored **Circulation**: rapid carotid absent radial pulses, skin is pale and cool, severe bleeding noted from both upper legs **Rapid Trauma Survey** **Circulation:** increased bleeding if not addressed **Extremities:** bilateral compound fractures of femurs, bilateral ankle deformity with right foot angled laterally **History** S - pain in both legs A - morphine M - none P - none L - lunch E - fell of scaffold	• Discuss the modern concept of "shock" • Discuss the pathophysiology of hemorrhagic shock • Shock is generally recognized too late and treated insufficiently; delaying transport of a patient in shock is a critical mistake. • Stress that the extremities MUST be examined for exsanguinating blood loss during the ITLS primary survey. • The treatment of extremity trauma should be de-emphasized in the patient with a load-and-go condition. *traction splints should not be applied; but rather, a long spine board* • Estimated blood loss in major extremity fractures should be covered. • The splints available for various purposes should be mentioned. • Stress that the rescuer must note neurovascular status of the extremities before and after splinting procedures. • Discuss the use of tourniquets and hemostatic agents in the situation of exsanguinating hemorrhage. • Mention that when there is bleeding that cannot be controlled by pressure, use of a tourniquet and/or hemostatic agents is warranted.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to quickly recognize femur fractures • Failure to properly manage femur fractures

Cognitive Objectives

- Prioritize extremity trauma in the assessment and management of life-threatening injuries
- Discuss the major complications and treatment of the following extremity injuries:
  - o Fractures, open wounds
- Estimate blood loss from extremity fractures
- Discuss major mechanisms of injury, associated trauma, potential complications, and management of injury to the following areas: - Femur
- Discuss the use of hemostatic agents for uncontrolled extremity hemorrhage

Psychomotor Objectives

- Perform scene size up and initial assessment
- Perform rapid trauma survey
- Explain when to use a traction splint
- Describe the complications of using a traction splint
- Apply the most common tractions splints:
  - o Thomas splint
  - o Hare splint
  - o Sager splint

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Shock Management – Case 6

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 28-year-old patient stabbed as a result of an argument in a bar **Scene Size Up** Law enforcement has cleared all patrons out of the bar; no danger; no other victims **Injury** • Penetrating wound above umbilicus **Patient Evaluation** Unresponsive	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** unresponsive **Airway:** snoring respirations, blood in airway **Breathing:** rapid & shallow **Circulation:** rapid, weak radial pulses, skin is pale and cool, slight bleeding noted from stab wound **Rapid Trauma Survey** **Head:** multiple facial abrasions **Abdomen:** penetrating wound above umbilicus **Neuro:** diminished PMSx4 **History** S - unobtainable A - unobtainable M - unobtainable P - unobtainable L - unobtainable E - unobtainable	• Discuss the modern concept of "shock" • Discuss the pathophysiology of hemorrhagic shock • Shock is generally recognized too late and treated insufficiently; delaying transport of a patient in shock is a critical mistake. • Discuss the management of shock o Exsanguinating internal hemorrhage o Exsanguinating external hemorrhage that can be controlled o Exsanguinating external hemorrhage that cannot be controlled	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to quickly recognize intra-abdominal bleeding • Failure to properly manage intra-abdominal bleeding

Cognitive Objectives
- List the four components necessary for normal tissue perfusion
- Describe symptoms and signs of hemorrhagic shock
- Explain the pathophysiology of hemorrhagic shock and compare to the pathophysiology of high-space shock
- Describe the three common clinical shock syndromes
- Describe the management of the following:
  - o Hemorrhage that can be controlled
  - o Hemorrhage that cannot be controlled
  - o Nonhemorrhagic shock syndromes

Psychomotor Objectives
- Perform scene size up and initial assessment
- Perform rapid trauma survey

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Small Group Technical Skills 4
Spinal Skills/Immobilization

Case 1
22-year-old patient was involved in an altercation at a bar

Case 2
22-year-old patient was involved in an MVC

Case 3
78-year-old patient is an unrestrained passenger an MVC

Case 4
45-year-old patient riding on back of motorcycle, side impact into mini van with patient striking van

Case 5
19-year-old patient involved in 2 vehicle MVC

Case 6
19-year-old patient involved in MVC, collision motorcycle VS car

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Spinal Skills/Immobilization – Case 1

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 22-year-old patient was involved in an altercation at a bar **Scene Size Up** Patient is found on the dance floor; law enforcement has cleared all patrons out of the bar; no danger; no other victims **Injury** • Cervical spine injury - prone patient **Patient Information** Awake and alert, in no apparent distress, neck and back pain	***All within normal limits or unchanged unless noted*** **Initial Assessment** **WNL** **Rapid Trauma Survey** **Head:** several small abrasions on face **Neck:** severe neck pain with deformity at C-4 **Arms:** several small abrasions on hands **Neuro:** PMS intact X 4 **History** S - neck pain A - NKDA M - none P - none L - 2 hours ago E - "I was dancing with someone else's girlfriend"	• Stress that not only must the cervical spine be protected, but the entire spine. • Cover the anatomy of the spine briefly • Stress documentation of the brief neurological exam (movement and sensation of hands and feet) before and after extrication or movement of the patient with a suspected spinal injury. • Stress that full SMR includes cervical collar, head immobilizer, and appropriate strapping applied to the patient on a long spine board. • Stress that cervical collars alone offer little to no protection of the cervical spine. ITLS teaches that SMR is manually maintained by a team member until the patient is secured to the long spine board. • Emphasize that SMR on a long spineboard MANDATES airway protection by the rescuer due to the patient being prevented from protecting himself.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize need for immobilization • Failure to properly immobilize pt.

Cognitive Objectives

- Explain the normal anatomy and physiology of the spinal column and spinal cord
- Define spinal motion restriction (SMR) and explain why this term is preferred to the term spinal immobilization
- Describe the mechanisms of injury that indicate SMR may be required
- Give examples of special situations for which SMR may need to be altered

Psychomotor Objectives

- Perform scene size up and initial assessment
- Perform rapid trauma survey
- Describe the essential components of the spinal motion restriction (SMR) system
- Explain when to use SMR
- Perform log-rolling of a patient onto a long backboard
- Properly secure a patient to a long backboard

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Spinal Skills/Immobilization – Case 2

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 22-year-old patient was involved in an MVC **Scene Size Up** Patient is found standing next to the vehicle; no danger; no other victims **Injury** • Cervical spine injury - standing patient **Patient Information** Awake and alert, in no apparent distress, neck and back pain	***All within normal limits or unchanged unless noted*** **Initial Assessment** **WNL** **Rapid Trauma Survey** **Neck:** severe neck pain with point tenderness at C-2 **Neuro:** PMS intact X 4 **Back:** minor lumbar pain **History** S - neck pain A - NKDA M - birth control pills P - none L - 20 minutes ago E - "I was struck from behind on the freeway."	• Stress that not only must the cervical spine be protected, but the entire spine. • Cover the anatomy of the spine briefly • Stress documentation of the brief neurological exam (movement and sensation of hands and feet) before and after extrication or movement of the patient with a suspected spinal injury. • Stress that full SMR includes cervical collar, head immobilizer, and appropriate strapping applied to the patient on a long spine board. • Stress that cervical collars alone offer little to no protection of the cervical spine. ITLS teaches that SMR is manually maintained by a team member until the patient is secured to the long spine board. • Emphasize that SMR on a long spineboard MANDATES airway protection by the rescuer due to the patient being prevented from protecting himself.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize need for immobilization • Failure to properly immobilize pt.

Cognitive Objectives

- Explain the normal anatomy and physiology of the spinal column and spinal cord
- Define spinal motion restriction (SMR) and explain why this term is preferred to the term spinal immobilization
- Describe the mechanisms of injury that indicate SMR may be required
- Give examples of special situations for which SMR may need to be altered

Psychomotor Objectives

- Perform scene size up and initial assessment
- Perform rapid trauma survey
- Describe the essential components of the spinal motion restriction (SMR) system
- Explain when to use SMR
- Properly secure a patient to a long backboard
- Perform SMR on a patient from a standing position

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Spinal Skills/Immobilization – Case 3

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 78-year-old patient is an unrestrained passenger in an MVC **Scene Size Up** The patient is still sitting in the vehicle; windshield broken; no danger; no other victims **Injury** • Cervical spine injury - rapid extrication **Patient Evaluation** Unresponsive	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** unresponsive **Airway:** teeth & blood in airway; no airway compromise **Breathing:** slow rate, normal depth **Rapid Trauma Survey** **Breathing:** diminished **Head:** bleeding from scalp laceration **History** S - unobtainable A - unobtainable M - unobtainable P - unobtainable L - unobtainable E - unobtainable	• Note the indications for Rapid Extrication Primary survey of the patient identifies a condition that requires immediate intervention that cannot be done in the entrapped area, such as: o Airway obstruction that cannot be relieved by jaw thrust or finger sweep o Cardiac or respiratory arrest o Chest or airway injuries requiring ventilation or assisted ventilation o Deep shock or bleeding that cannot be controlled • Note that there are other situations that are so desperate that you may not have time to use any technique other than pulling the patient to safety: o Fire or immediate danger of fire o Danger of explosion o Rapidly rising water o Structure in danger of collapse o Continuing toxic exposure • Mention that short backboard type SMR devices may be difficult to apply and ineffective in pregnant and very obese patients.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize the need for rapid extrication or emergency extrication. • Failure to properly perform rapid or emergency extrication.

Cognitive Objectives
- Describe the process of SMR from extrication through transportation, including airway maintenance
- Explain the difference between emergency rescue and rapid extrication

Psychomotor Objectives
- Perform scene size up and initial assessment
- Perform rapid trauma survey
- Perform a rapid extrication

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Spinal Skills/Immobilization – Case 4

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 45-year-old patient riding on back of motorcycle, side impact into mini van with patient striking van **Scene Size Up** Patient is found lying next to the mini van wearing a helmet; no danger; no other victims **Injury** • Cervical spine injury - helmet removal **Patient Information** Awake & alert, complaining of neck pain	***All within normal limits or unchanged unless noted*** **Initial Assessment** **WNL** **Rapid Trauma Survey** **Neck:** pain and point tenderness at C-5 **Neuro:** diminished PMS in lower extremities **History** S - neck pain A - none M - albuterol P - asthma L - breakfast E - "The van pulled out in front of us."	• Briefly clarify management of unusual circumstances such as: o Helmet removal	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize need to remove helmet • Failure to remove helmet correctly • Failure to minimize manipulation of c-spine

Cognitive Objectives
- Describe the mechanisms of injury that indicate SMR may be required

Psychomotor Objectives
- Perform scene size up and initial assessment
- Perform rapid trauma survey
- Explain when helmets should and should not be removed from an injured patient
- Properly remove a motorcycle helmet

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Spinal Skills/Immobilization – Case 5

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 19-year-old patient involved in 2 vehicle MVC **Scene Size Up** Patient is found outside the vehicle; no danger; no other victims **Injury** • Cervical spine injury - spinal shock **Patient Information** Patient is alert but confused, when asked patient complains of no sensation below waist	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** alert but confused **Breathing:** slight abdominal muscle use **Rapid Trauma Survey** **Neck:** very specific C-7 & T-1 union pain **Chest:** diminished chest wall movement **Extremities:** no PMS, multiple abrasions **Skin:** pink, warm and dry below nipple line, cool and clammy above nipple line **Vital Signs:** BP 70/40, P 80, R 26 **History** S - no feeling below nipple line A - none M - none P - none L - unknown E - unknown	• Briefly discuss the signs, symptoms, and treatment of neurogenic shock.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize spinal shock. • Failure to manage spinal shock.

Cognitive Objectives
- Using the clinical evaluation, differentiate neurogenic shock from hemorrhagic shock

Psychomotor Objectives
- Perform scene size up and initial assessment
- Perform rapid trauma survey

Revised - July 2008

ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

Spinal Skills/Immobilization – Case 6

Scenario	Assessment and findings	Key Points	Unacceptable Actions
Situation 19-year-old patient involved in MVC, collision motorcycle VS car **Scene Size Up** Patient ejected from motorcycle not wearing a helmet; lying on the hood of the vehicle; no danger; no other victims **Injury** • Closed head injury **Patient Evaluation** Unresponsive	***All within normal limits or unchanged unless noted*** **Initial Assessment** **LOC:** unresponsive **Airway:** snoring respirations **Breathing:** very slow and shallow **Circulation:** weak radial pulses **Rapid Trauma Survey** **Head:** multiple facial abrasions, pupils unequal **Extremities:** posturing **Neuro:** diminished PMSx4 **Vital Signs:** BP 194/130, P 80, R 7 **History** S - unobtainable A - unobtainable M - unobtainable P - unobtainable L - unobtainable E - unobtainable	• Cover the anatomy. • Cover the physiology of the brain and explain why hyperventilation is no longer recommended except in herniation syndrome. • Emphasize the control of the airway in the patient with an altered level of consciousness. • Stress that a patient with a serious head injury will not tolerate hypoxia or hypotension. In this situation do not allow the blood pressure to get below 100–110 systolic. • Prehospital providers tend to inadvertently hyperventilate head-injured patients. Stress that, if possible, capnography should be used to prevent inadvertent hyperventilation. • Mention the aspects of the Glasgow Coma Score and that each part should be recorded, not just the total score. This score should always be recorded if there is altered mental status. • Stress indications for hyperventilation. • Reinforce that any trauma patient who has an altered level of consciousness must be presumed to have a cervical spine injury until proven otherwise. Appropriate precautions must be taken.	• Failure to do scene size up • Failure to use standard precautions • Failure to take and maintain SMR • Failure to recognize herniation syndrome • Failure to properly manage herniation syndrome.

Cognitive Objectives

- Describe the pathophysiology of traumatic brain injury.
- Explain the difference between primary and secondary brain injury & describe the mechanisms for secondary brain injury.
- Describe the assessment of the patient with a head injury.
- Describe the prehospital management of the patient with a head injury.
- Recognize and describe the management of the cerebral herniation syndrome.
- Identify potential problems in the management of the patient with a head injury.

Psychomotor Objectives

- Perform scene size up and initial assessment
- Perform rapid trauma survey

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ITLS Primary Survey

- **Scene Size-up**
  - Standard precautions
  - Hazards
  - Number of patients
  - Additional help/equipment
  - MOI
- **Initial Assessment**
  - General impression
    - age, sex, weight, general appearance, position, acuity, obvious injuries/bleeding
  - LOC
    - AVPU
  - Control cervical spine
  - Airway
    - snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled Hemorrhage
- **Rapid Trauma Survey**
  - Inspect Head and Neck
    - major facial injuries, bruising, swelling, penetrations, subcutaneous emphysema, JVD? tracheal deviation?
  - Inspect Chest
    - asymmetry, contusion, penetrations, paradoxical motion, instability, crepitation
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - bruising, penetration/evisceration, tenderness, rigidity, distention
  - Pelvis
    - tenderness, instability, crepitation
  - Lower/upper extremities
    - swelling, deformity, instability, motor, sensory
  - Posterior
    - penetrations, deformity, presacral edema

*****If critical situation, transfer to vehicle to complete exam*****

  - Vital signs
    - HR; BP; RR
  - Pupils
    - size; reactive; equal
  - Coma Scale Score
    - eyes, voice, motor, orientation, emotional state

ITLS Secondary Survey

- **Initial Assessment**
  - LOC
    - AVPU
  - Airway
    - control cervical spine, snoring, gurgling, stridor, silence
  - Breathing
    - present? rate, depth, effort
  - Carotid/Radial Pulses
    - present? rate, rhythm, quality, skin color, temperature, moisture; capillary refill
  - Uncontrolled External Hemorrhage?
- **Detailed Exam**
  - History
    - SAMPLE
  - Vital signs
    - HR; BP; RR; SpO2; ECG; blood sugar; EtCO2
  - Glasgow Coma Scale Score
    - eyes, voice, motor, emotional state
  - Head
    - pupils, battle's signs; raccoon eyes; drainage; DCAP-BTLS
  - Neck
    - DCAP-BTLS; JVD; tracheal deviation
  - Chest
    - asymmetry; paradoxical motion; DCAP-BTLS; TIC
  - Breath Sounds
    - present? equal?
  - Heart Tones
  - Abdomen
    - DCAP-BTLS; rigidity; distension
  - Pelvis
    - DCAP-BTLS
  - Lower/Upper extremities
    - DCAP-BTLS; PMS; TIC
  - Posterior
    - DCAP-BTLS - if not done

ITLS Ongoing Exam

- Subjective Changes
  - "How do you feel?
- Reassess Mental Status
  - LOC, pupils, GCS
- Reassess ABCs
  - patency, vital signs, color, skin condition, temperature, JVD, tracheal deviation, breath sounds, heart tones
- Reassess Abdomen
  - development of tenderness, distention, rigidity
- Check Each Identified Injury
  - change in status, PMS
- Check Interventions
  - patency, position, flow rate, security

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