



Comprehensive Advanced Life Support
RURAL EMERGENCY MEDICAL EDUCATION

CALS INSTRUCTOR GUIDELINES

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CALS Instructor Guidelines

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CALS Program Overview

Rural Emergency Medical Education

CALS (Comprehensive Advanced Life Support) provides a variety of educational resources designed specifically for rural health care teams to meet their emergency medical training needs.

Through its core Provider Course and its additional learning labs and modules, CALS teaches an effective approach to the care of critically ill/injured patients manifesting a wide range of emergencies including trauma, cardiac, strokes, pediatric, OB, neonatal, airway compromise, and sepsis. The course is most typically taught in the rural or remote facility, where resources are limited. More than 96% of participants report that taking the CALS course enhanced their skills, confidence and teamwork abilities, leaving them better prepared to treat critically ill or injured patients.

The CALS curriculum is based on the four key elements that drive success when treating patients in an emergent setting:



Emergency Skills and Knowledge: Without proficiency in the basic skills and procedures, no emergency team can provide adequate care.

Effective Provider Teams: Well-functioning teams are critical to the delivery of appropriate, timely and effective medical care.

Patient-Focused Care and Systems: Hospital systems such as record keeping triage and evaluation must focus on the needs of the patient and be provided in a timely and professional manner.

Appropriate Equipment: Hospital emergency departments must have a basic set of drugs, equipment and supplies to provide adequate

Together, all four of these elements, working in unison, drive excellence in patient care in the emergent setting. This is the foundation of the CALS approach.

CALS courses are usually held onsite at rural facilities, allowing the entire emergency department team to participate. Providers are encouraged to attend in teams consisting of a team leader (usually a physician), other physicians, physician assistants, nurse practitioners, nurses, and other allied health professionals. Courses are limited to 24 participants per session.

CALS also provides ongoing emergency medical education through its web site and its online Emergency Care Manual, an extensive resource detailing a wide variety of algorithms, videos, and references addressing the full scope of knowledge in advanced life support.

Missions, Visions & Values

MISSION

CALS improves patient care by providing advanced life support education to rural healthcare providers.

VISION

CALS is a global premier source of quality emergency and critical care education for resource challenged communities.

VALUES

Commitment: We are committed to improving rural medical care by providing education designed for locations where technological support may be limited, experience infrequent and specialized personnel unavailable.

Quality: We strive to provide leading-edge and evidence-based medical information.

Team: We believe each member of the health care team provides value.

Course Description

Two-Day CALs Provider Course

This course provides the foundation for all aspects of CALS education. Encompassing home study and two-days of hands-on, scenario-based training, the Provider Course covers the full spectrum of emergency care while providing an introduction to critical concepts, algorithms and the Universal Approach.

3 Hour Trauma Module

This course provides physicians, advanced practitioners, nurses and paramedics with the opportunity to learn and practice infrequently used life-saving skills. It expands upon skills covered in the Provider Course, satisfying Minnesota state Trauma Committee education requirements for Level II of Level IV designation

Full-Day Benchmark Skills Lab

This lab provides realistic, hands-on experience in many of the skills necessary for stabilization of critically ill or injured patients. An emphasis is placed on the value of preparation, teamwork, and hands-on skills leaning and practice.

Course Objectives

Universal Approach Interactive Discussion

Objectives: The participant will be able to:

1. Work through a case using the CALS Universal Approach
2. Generalize this to the management of all emergency patients.
3. Demonstrate knowledge of finding information in the CALS Provider Manual.

This is an **interactive discussion** involving **all** participants. The case scenario follows the detailed steps of the Universal Approach Algorithm. The scenario is presented to help students navigate the manual as a reference. The focus is not the treatment of the case. Have the students use the universal algorithm and have the book available to turn to different sections.

Step 1: How do they receive communication regarding the patient's arrival?

How many staff do they have available?

Do they have trauma alert protocols?

Step 2: Immobilization of the patient.

Can they handle an uncooperative patient?

Emphasize the value of the EMS report

Step 3: The Team

Discuss the ten seconds of silence

Emphasizes the team approach - care of the critically ill/injured patient is not accomplished by only one person.

A leader has to be identified (may be a nurse until the physician arrives).

Roles need to be defined (roles will vary with each organization).

Stress the need of a systematic approach to assessment.

Team Leader roles:

1. Initial survey - ABCD (include the AVPU, SAMPLE and DON'T)
2. Organizes team, prioritizes and delegates tasks
3. Allocates resources
4. Directs decisions and analyzes data
5. Forms a treatment plan
6. Directs communication

Team member roles:

1. Exposure
2. Vital signs/cardiac monitor/oximeter
3. Apply oxygen
4. Blood glucose evaluation
5. Medication administration as directed by team leader
6. Facilitates labs/x-ray
7. Urinary catheter and gastric tube
8. Arranges transport
9. Ongoing communication to team leader regarding patient

Step 4: Preliminary impression

Use the CALS compass to emphasize the possibilities

Focused exam and laboratory tests

Step 5: Working diagnosis/Ongoing care/Disposition:

Refer to portals.

Discuss what happens if a patient deteriorates

Ongoing Care

Disposition and transfer protocols

Step 6: Team process review

Airway Management Discussions and Skills

Initial Management of Critical Airway and Breathing

Objectives: The participant will be able to:

1. Describe the process of evaluation of airway and breathing
2. List the interventions for opening and maintaining an airway and assisting breathing (positioning, suction, oral/nasal airways, BVM).
3. Discuss the nine Ps of rapid sequence intubation.

This **interactive discussion** covers different airway scenarios and detailed information in reference to RSI. Students should take out the RSI card and use it as they progress through different RSI scenarios. Discuss reasons for tracheal intubation. Discuss the place of RSI in rural family practice. Present the 9 P's of RSI in detail, with particular emphasis on drug selection, timing of procedure, need for backup rescue plan, methods of confirmation of tube placement and post-intubation management.

Rapid Sequence Intubation (RSI)

Objectives: The participant will be able to:

1. Demonstrate patient assessment and management using the Universal Algorithm with a team approach.
2. Review basic endotracheal intubation.
3. Recognize the indications for rapid sequence intubation.
4. Perform the steps of RSI in a real-time format during scenarios (including preparation, timing, drugs, rescue plan, confirmation of tube placement and post-intubation care).
5. Recognize the potential difficult airway and prepare an alternative plan

Proceed through a variety of airway scenarios using different members of the group as team members. This station should have one scenario requiring basic airway management in addition to RSI. **Role-playing and hands-on** is essential in this station. Use the manikins and equipment. Students should demonstrate proper use of the BVM and airway equipment including the ET Tube Introducer (Bougie) and supraglottic airways (I-gel, LMA or King tube). Have team members practice finding dosages, drawing up and giving meds. (Use the practice sheets available at the station.)

Pediatric Airway

Objectives: The participant will be able to:

1. Describe anatomical differences and positioning during management of the pediatric airway.
2. Demonstrate using multiple tools as a resource for medication dosages and equipment size.
3. List the steps utilized in rapid sequence intubation.

4. Discuss the relevance of Sellick's/ BURP (backward, upward, rightward, pressure) and Tracheal manipulation technique during intubation.
5. Demonstrate management of a child with asthma.
6. List the signs and symptoms of status asthmaticus.
7. Demonstrate airway management of a child with a head injury.
8. Demonstrate airway management of a child with an airway obstruction.

Hands on role-playing and discussion of the Pediatric Assessment Triangle (includes assessment of work of breathing, general appearance and circulation to the skin). Explain how to use the Broselow Tape and Hennepin County Medical Center (HCMC) Pediatric Drug Book. Review adjunct equipment, such as: bag-valve mask, oximeter placement, oral/nasal airways, BURP technique FB removal using meconium aspirator technique. This is a hands-on part of the station using manikins to present an airway management scenario (including preparation, timing, drugs and dosages, rescue plan, confirmation of intubation and post-intubation care) utilizing the Universal Algorithm.

Airway Techniques

Objectives: The participant will be able to:

1. List indications for interventions in management of the rescue or non-routine airway
2. Demonstrate using airway adjuncts/alternatives to oral intubation or RSI, such as King Airway, BVM and needle-jet ventilation.
3. Demonstrate and discuss use of end-tidal CO₂ monitoring.
4. List indications for CPAP and BiPAP, specify pressure settings for specific indications and demonstrate use of equipment

This **hands-on skills practice station** is used to demonstrate the equipment and interventions emergency teams may utilize to maintain a patent airway and support ventilation. Indications for each intervention will be discussed. This includes review and practice with BVM, use of the gum bougie, rescue airways such as the King tube, and Transtracheal needle ventilation. Encourage students to practice and handle the equipment as much as possible.

Advanced Intubation Skills

Objectives: The participants will be able/better able to:

1. Choose the appropriate airway management technique for a given situation
2. Select and properly utilize airway equipment
3. Properly position the manikin and perform an endotracheal intubation.
4. Demonstrate the use of alternative airways when endotracheal intubation fails

5. Demonstrate the proper technique for using a video laryngoscope for intubation

This is an intensely supervised **hands-on skills practice station**. Participants may self-select airway equipment and techniques they wish to learn/practice based on the resources available in their practice setting. The instructor will demonstrate the piece of equipment and allow the student sufficient time to practice. This may include standard laryngoscopy/intubation; video laryngoscopy, LMA/Intubating LMA, I Gel, AirTrach, and cricothyrotomy.

For participants whose scope of practice includes advanced airway management: Provides participants with the opportunity to practice tracheal intubation and associated skills with guidance and supervision?

Trauma/Neurological Management Discussions and Skills

Adult and Pediatric Trauma Interactive Discussion

Objectives: Participants will be able/better able to:

1. Describe the primary and secondary assessment
2. Manage airway and ventilations in pediatric and adult trauma patients
3. Manage hemorrhagic shock with fluid resuscitation, blood products and prevent coagulopathies
4. Describe damage control resuscitation in the trauma patient
5. Choose appropriate imaging strategies and tests
6. Describe essential treatments for specific injuries in pediatric and adult trauma patients
7. List differences between trauma care in pediatrics and adults
8. Prepare a critical patient for transfer

This is an **interactive discussion** format for the entire class. Discussion includes pediatric and adult trauma care, damage control resuscitation, shock, administration of TXA, classification of blood loss and volume replacement, imaging and labs.

Adult Trauma

Objectives: The participants will be able to:

1. Perform the initial assessment of a multiple trauma patient using the Universal Algorithm and effective teamwork
2. Demonstrate primary and secondary survey of an adult patient with multiple trauma and shock
3. Discuss management of a patient with a pelvic fracture.
4. Triage multiple trauma patients and prioritize care
5. Evaluate and treat an adult patient with hemopneumothorax.
6. Recognize widened mediastinum and blood in abdomen on imaging

7. Apply tourniquet to a exsanguinating wound to control hemorrhage

This is a **Role-playing and hands-on station**. Many of these points have been discussed in the didactic portion. Time should be devoted to participants managing the case, with feedback and discussion only as needed.

- Emphasize 10-second survey, initial focused survey and head to toe assessment
 - Review, as needed, keeping the patient warm
 - Proper application of a tourniquet
 - Assess Glasgow score on trauma patients
 - Management of a patient with a pelvic fracture (exam done by one person)
 - Sheeting of pelvic fractures (have other immobilization tools available)
 - Lifting rather than log rolling patient
 - Blood at meatus in males (urinary catheter vs suprapubic catheter)
 - Placement of OG tubes in intubated patients.
 - Vaginal exam in females
 - Use of blood/blood products (O-negative blood, O-positive and Type-specific)
 - X-ray interpretation of trauma films (priority chest; pelvis; other) and review findings of wide mediastinum, pneumothorax.
 - Treatment for hemo/pneumothorax with chest tube and chest suction
 - Discuss strategies for imaging and other tests
- Use and review Preparation for Transport algorithm

**Pediatric
Trauma and
Trauma Neuro
Emergencies**

Objectives: The participant will be able to:

1. Utilize the CALS Universal Algorithm to effectively manage a pediatric patient with multiple trauma and a patient with a traumatic head injury
2. Demonstrate primary and secondary assessment of the pediatric trauma patient with emphasis on the neuro exam
3. Discuss the role of imaging, basic head CT interpretation for normal conditions, and for subdural and epidural hematomas, midline shift, and cerebral contusion.
4. Demonstrate interventions for increased ICP and herniation syndrome (airway and breathing management, fluid management, mannitol, and hypertonic saline).
5. Discuss indications and contraindications for trephination.
6. Recognize a spinal cord injury and provide appropriate care for the patient
7. Institute and maintain appropriate spinal immobilization.

This is a **Role-playing and hands-on station**. Many of these points have been discussed in the didactic portion. Time should be devoted to participants managing the case, with feedback and discussion only as needed.

Teaching points include evaluation of head injury and multiple traumas, utilizing the AVPU scale and GCS, spinal immobilization, seizure prophylaxis, blood pressure management, Raney clip usage. The scenario will include rapid deterioration of a patient with an epidural to include the neurological exam, dilated pupil, and CT findings, treatment protocols (Mannitol, hypertonic saline, hyperventilation, Phenytoin loading, and indications for Galt trephination). *CALS only discusses the procedure and by no means is training students to be competent in the procedure of trephination. Consult neurosurgeon prior to trephination of any patient.*

**Vascular Access
with ultrasound
techniques and
EZ-IO**

Objectives: The participants will be able to:

1. Demonstrate, locate and access peripheral vascular veins using ultrasound.
2. Demonstrate, locate and access central and/or femoral veins using ultrasound.
3. Locate and access external jugular veins.
4. Discuss the indications and use of the RIC catheter.
5. Demonstrate, locate and discuss intraosseous access procedure.

This is a **hands-on skill practice station** for practicing vascular access utilizing ultrasound guidance. Discuss complications of different types of vascular access. Equipment used during resuscitation is demonstrated and student's questions are discussed.

The station is divided into segments. It requires 2 instructors, 2 ultrasound machines, and manikins to demonstrate peripheral and central line insertions. Note that we are considering EJ's as peripheral lines

After reviewing the station objectives with participants, instructors should demonstrate EZ- IO, external jugular and RIC catheter procedures. The ultrasound machine is introduced and peripheral venous access demonstrated. While nurses practice external jugular on the central line manikin, physicians, PAs and NPs practice with the peripheral line phantom.

One instructor demonstrates ultrasound guided central line access to physicians, NPs and PAs on the central line manikin while nurses practice ultrasound-guided peripheral access.

The providers without access to ultrasound can practice placement of intraosseous access after demonstration of procedures.

Medical/Neurological Management and Skills

Adult Medical

Objectives: The participant will be able to:

1. Perform the initial assessment of a compromised patient using the Universal Algorithm.
2. Recognize Sepsis
3. Discuss the treatment and management of a patient in septic shock.
4. List the signs and symptoms of anaphylaxis
5. Discuss the treatment and management of a patient with anaphylaxis

This is a **Role playing and hands-on station** where students perform as a team in resuscitation of a patient with medical crisis utilizing the following scenarios:

Shock

Follow Universal Approach

Recognition of shock; discuss the physiologic approach to shock and/or SHRIMPCAN mnemonic

Review treatment of septic shock

Review treatment of anaphylaxis/anaphylactic shock

Pediatric Medical

Objectives: The participants will be able to:

1. Perform the initial assessment of a patient in extremis utilizing the Universal Approach Algorithm.
2. Discuss the Pediatric Assessment Triangle (I.E: The across the room assessment)
3. Identify the signs and symptoms of diabetic ketoacidosis
4. Discuss the initial management of a child with diabetic ketoacidosis.
5. Discuss the management of a patient in status epilepticus.
6. List options for medications and routes of administration in status epilepticus

This is a **Role playing and hands-on station** that includes the following teaching points:

Stress recognition of the ill child and utilizing the Pediatric Assessment Triangle.

Seizures – Immediate treatment concerns:

- Airway and oxygen
- Glucose and thiamine
- Maintaining normal BP
- Drug Therapy
 - Benzodiazepines

- Phenytoin
- Fosphenytoin
- Use of Phenobarbital
- Routes of medication administration
- Timetable for status epilepticus
- Cause of seizure may be due to sepsis.
- Emphasize early antibiotics
- Transport decision-making
- Diabetic Ketoacidosis – Discuss the goals of DKA management:
- Correct dehydration
- Reverse acidosis and ketosis
- Correct electrolyte abnormalities and restore glucose to normal

**Medical
Neurological
Emergencies**

Objectives: The participant will be able to:

1. Demonstrate the CALS Universal Algorithm, teamwork and neurological examination of a patient with acute ischemic stroke
2. Demonstrate use of the NIH stroke scale
3. Discuss the blood pressure control parameters for acute ischemic stroke
4. List indications and contraindications for fibrinolytics
5. List the components of the DONT and TIPS from the VOWELS
6. Manage an agitated patient
7. Establish a diagnosis of meningitis and begin treatment

This is a **scenario-based interactive discussion**. Scenarios are presented using a power point format. Discussion includes the neurological exam, role of rapid evaluation and CT scan, blood pressure control in relation to cerebral perfusion pressure, seizure prophylaxis, and fibrinolytic therapy for ischemic strokes.

Cardiac Management and Skills

ECG Review

Objectives: The participants will be able to:

1. Discuss basic ECG complexes with emphasis on ST segment elevation.
2. List the differences in interventions dependent on location of infarction in the heart muscle.
3. Demonstrate a two-step process for determining basic patterns of ST segment elevation to determine location of infarction (anterior, inferior, lateral)
4. Discuss the indications of a LBBB in myocardial infarction

This is an **interactive discussion** with emphasis is on identifying basic ECG components: ST segment changes during AMI, recognizing abnormal patterns associated with Acute Coronary Syndromes (includes ST depression, T-wave inversion, and left bundle branch block. Discuss normal ECG complexes with emphasis on ST segment. Correlate areas of the heart with the 12-lead ECG and identify baseline parameters involving anterior and inferior MIs and the clinical presentation of each. Students should practice the simple two-step process for screening for STEMI in the inferior and anterior wall. Discuss ECG leads looking at the lateral wall. Discuss how to recognize and the indications of a LBBB in a myocardial infarction. Review several ECG patterns discussed.

**Bradycardia/
Tachycardia**

Objectives: The participants will be able to:

1. Identify life-threatening tachycardia and bradycardia
2. Demonstrate the use of the defibrillator for cardioversion and defibrillation.
3. Discuss the management of a patient with stable and unstable tachycardic arrhythmias.
4. Discuss considerations in treating atrial fibrillation.
5. Demonstrate the assessment and identification of bradycardia, PEA and asystole.
6. Discuss the causes and treatment parameters of bradycardia, PEA and asystole
7. List the 5 Hs and 5 Ts in determining management of bradycardic arrhythmias.
8. Recognize right-sided involvement in an AMI, PEA and asystole
9. Demonstrate use of the external pacemaker
10. Simulate steps in procedural sedation

This is a **Role playing and hands-on station** in which participants should run scenarios using the defibrillator (for cardioversion & defibrillation) and medications in managing the patients. Rhythms reviewed are SVT, unstable wide complex tachycardia. Treatment modalities should be covered using the ACLS algorithms. The ACLS guidelines should be incorporated into the scenarios.

**STEMI/CPR/ Post
Resuscitation
Care**

Objectives: The participants will be able/better able to:

1. Discuss the steps in management of STEMI and implement treatment protocol
2. Recognize and institute treatment for ACS
3. Follow the AHA Algorithm for Cardiac Arrest
4. Manage V Fib arrest including CPR, AED and manual defibrillation

5. List important post-arrest interventions, including therapeutic hypothermia (indications, contraindications, induction of hypothermia, monitoring)

This is a **Role playing and hands-on station**. A scenario is presented in which a patient presents with ACS that turns out to be a STEMI. Initial management of ACS is conducted, followed by implementation of a STEMI protocol. Examples of such protocols are made available

Prior to transfer, this patient goes into V fib arrest. Participants should perform CPR. Subsequent to ROSC, post-arrest care is rendered. CALS Therapeutic Hypothermia protocol is reviewed.

A second scenario is presented requiring use of the AED.

Participants should run scenarios using the AED and performing CPR in real time with the AED. Utilize monitor/defibrillator and state medications that are used to manage the patient. Feedback is given focusing on the objectives above. Treatment modalities should be covered using the ACLS algorithms. ACLS guidelines should be incorporated into the scenarios.

Shock and Heart Failure

Objectives: The participants will be able/better able to:

1. Recognize the signs and symptoms of shock
2. Discuss the physiologic approach to evaluation and treatment of shock and/or the SHRIMPCAN mnemonic
3. Evaluate and manage acute heart failure and pulmonary edema

This is a **scenario-based interactive discussion**. A case of shock is presented. Participants are asked to identify shock and propose likely etiologies based on bedside evaluation. A discussion is conducted to demonstrate both the physiologic approach to shock and the SHRIMPCAN mnemonic.

A case of acute heart failure and pulmonary edema is presented in the same manner. Teaching points should include: evaluation of fluid status and corresponding treatment with diuretics or fluids; use of vasodilators, primarily nitrates, their risks and contraindications; use of CPAP. Other less-standard therapies such as ACE inhibitors and nesiritide should be mentioned

Obstetrical and Neonatal Management Discussions and Skills

Obstetrical Emergencies Interactive Discussion

Objectives: The participants will be able to:

1. State signs of compromised maternal status in obstetrical emergencies (trauma, bleeding, hypertension, pre-term labor, cardiac arrest, shoulder dystocia, postpartum complications, and ectopic pregnancy).
2. Discuss signs of fetal distress, fetal monitoring, and interventions.
3. List the steps in neonatal resuscitation.

This **interactive discussion** covers obstetrical emergencies and an overview of neonatal resuscitation. This scenario takes students through many obstetrical situations including:

Trauma in the OB patient
Fetal heart tone monitoring and interpretation
Post mortem C-section
Pregnancy induced hypertension, eclampsia
Anatomic and physiologic changes in pregnancy
Bleeding in pregnancy (placenta abruptio, ectopic pregnancy, etc.)
Imminent delivery
Assisted delivery mnemonic
Shoulder dystocia
Neonatal resuscitation

Emergency Obstetrical Deliveries

Objectives: The participant will be able to:

1. Demonstrate assisting with imminent delivery
2. Discuss delivery of a neonatal with nuchal and prolapsed cord.
3. Assist with the delivery complicated by shoulder dystocia using the HELPERR mnemonic.
4. Discuss manual retrieval of a retained placenta
5. Demonstrate the use of the vacuum suction device
6. Assist with the delivery complicated by malpresentation

Case scenarios should not be used, only brief vignettes should be used to optimize practice time for the students. Students should have **hands-on skills practice** with assisted deliveries and other OB complications that are listed in the objectives.

Assisted Delivery for vacuum suction procedure and forceps will NOT be taught in the CALS Provider Course.

**Neonatal
Resuscitation
and Skills
Practice**

Objectives: The participant will be able/better able to:

1. Demonstrate the steps in evaluation and resuscitation of the newborn using the CALS universal approach.
2. Simulate newborn assessment and use of the APGAR score
3. Demonstrate placement of umbilical vascular access lines and preparing for medication administration.
4. Demonstrate the management of a depressed, meconium stained newborn with an occluded airway.
5. Perform CPR on a Neonate
6. Discuss signs/symptoms and treatment of a neonate with a hypoglycemia.

Brief scenarios involving distressed newborns. **Hands-on role playing and skills practice** including: umbilical vein cannulation, neonate intubation, neonatal CPR, drawing-up drugs using stopcock method, securing ET tube with adhesive tape.

Teaching points include:

Drying, suctioning, stimulation, oxygen, BVM, chest compression and medications for resuscitation.

Perform neonatal CPR: ABC, 3:1 ratio

Review medications: Epinephrine, dextrose, Narcan (indications and contraindications)

Stress the use of reference tools (Broselow tape, HCMC drug book)

Placement of the oximeter

Calculating an APGAR score

Allow time for, participants to practice umbilical catheter placement and CPR.

**Environmental
Emergencies
Interactive
Discussion**

Environmental/Toxicology

Objectives: The participants will be able to:

1. Perform initial assessments of patients with environmental emergencies using the Universal Algorithm
2. Identify appropriate rewarming techniques based on patient's temperature
3. List how hypothermia is unique in ACLS
4. Give examples when to consider CO or cyanide poisoning, and explain how to treat these poisonings
5. Describe the treatments and ongoing care for the burn
6. Defines the differences between heat exhaustion and heat stroke
7. Describe the treatment for heat stroke

This station is done as a **small discussion group** using a power point presentation.

Hypothermia

- Airway - need intubation due to cold induced bronchorrhea causing copious secretions Circulation – CPR as needed (may defibrillate/ACLS drugs x 1 only) Natural progression of rhythm usually without treatment from V-fib, to A-fib, to NSR Hypovolemia-- due to cold diuresis.
- Rewarming - How low does your thermometer go?
- Internal warming only until patient reaches core temperature of 86°F
- Rewarming techniques: humidified oxygen, warm IV fluids, gastric lavage, bladder lavage, peritoneal lavage, and thoracic lavage

Burn care

- Fluid resuscitation
- Transfer criteria
- Carbon Monoxide toxicity
 - Discuss carbon monoxide poisoning and treatment
 - Reliability of oximeter readings
 - Blood gas analysis
 - Discuss ox hemoglobin dissociation curve
 - In both CO and hypothermia - acidosis is neuro protective
 - Patients at greatest risk are children, pregnant women and people with impaired cardiac functioning
 - Hyperbaric treatment
 - Possibility of cyanide poisoning

Hyperthermia

- Difference between heat exhaustion and heat stroke
- Cooling techniques

Toxicological Emergencies Interactive Discussion (CALs Critical Cases)

Objectives: The participants will be able/better able to:

1. Perform the initial assessment of patients using the Universal Algorithm and teamwork.
2. Discuss management of a patient with a toxicological reason for altered level of consciousness
3. Recognize common toxidromes and basic principles of their management
4. State the management parameters for stabilization of a patient with sympathomimetic toxidrome and an accidental beta blocker overdose.

This is an **interactive discussion**

Emphasize:

Universal algorithm

Do the DON'T

Calling Poison Control

Using Broselow tape

IO if IV unable to be established

Understanding basic toxidromes

Basic understanding about decontamination principles

Goals for Skill Station Scenarios

Participants will be able to:

1. Function as a team to provide emergency care to a simulated patient
2. Utilize the CALS Universal Approach.
3. Identify all life-threatening conditions and perform interventions
4. Provide self-evaluation and feedback to peers

Scenarios are presented to the teams and active participation requires **Role playing and hands on demonstration of skills**. Minimal instructor guidance or input during the case based scenario. Teams are evaluated by CALS instructors and feedback is given after the completion of the validations. Other participants will observe and provide feedback after the completion of the validations.

Refer to Module 5 for more detail of the validation.

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Requirements and Guidelines

Requirements to Maintain Instructor Designation

- Complete a CALS *Instructor Activity Sheet* for every course observed or taught.
- Teach the CALS curriculum as presented in the CALS Instructor Manual.
- Teach at least four CALS Provider Courses or Benchmark Skills Lab in a two-year (fiscal July–June) period or attend a CALS Provider Course in the same time period.
- Teach or observe all areas of the CALS Provider Course every two years or attend another CALS Provider Course
- Teach or attend a CALS Benchmark Skills Lab or Trauma Module once every four years. (Instructors who teach the trauma stations may benefit from attending the CALS Benchmark Skills Lab every two years. Prior approval required for reimbursement from CALS.)
- Participate in at least one CALS Instructor update every two years.
- Demonstrate ongoing teaching capability as documented on the instructor evaluation form.
- Maintain personal continuing education and license in area of expertise.

Failure to Maintain CALS Instructor Status

Failure to maintain CALS Instructor status will lead to a loss of all rights and privileges associated with being a CALS Instructor. Inactive personnel cannot claim to be a CALS Instructor until they have met the following requirements:

- Be current as a CALS Provider or attend a CALS course in its entirety.
- Team- teach with a CALS Instructor.
- Review the latest CALS update material

- An evaluator will observe the candidate's team teaching performance and provide immediate feedback (Instructor Evaluation form). The evaluator will recommend the candidate for or against reinstatement of the candidate as a CALS Instructor.

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Teaching a CALS course

Preparation is Fundamental

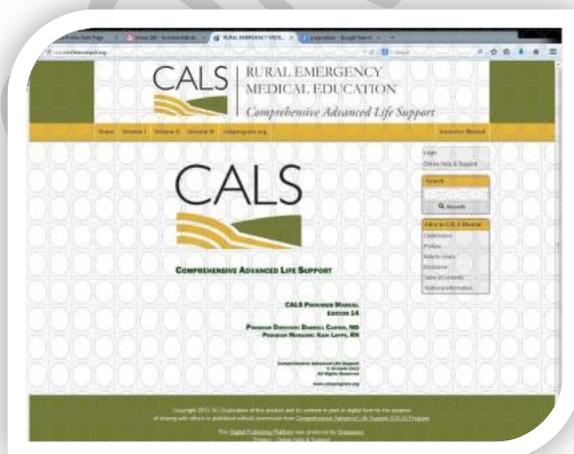
Preparing is a fundamental component of being an effective instructor. Preparation will enable you to teach more effectively, anticipate the needs of your students, and organize your teaching session, such as, leading an interactive discussion, facilitating a learning concept, conducting a debriefing or demonstrating a procedure.

Read and Review

- The CALS provider and instructor manuals that relate to your course sessions
 - Universal Approach
- The Instructor letter with information about the course

"Before anything else, preparation is the key to success."

~ Alexander Graham Bell



Accessing the Instructor Manual:

- www.cals.conferencespot.org
- Username: calsinstructor
- Password: instruct4cals

Accessing the Provider Manual:

- www.calsprogram.org
- Log in with your member username and password



Facilitating Successful Participant Outcomes

As a CALS instructor you are a crucial part to the success of the participants in the CALS Program. Facilitation can be achieved by the following.

- Demonstrate effective knowledge of the cased based scenarios consistent with the CALS curriculum
- Facilitates small group discussions with a focus on the station's objectives to achieve the desired outcome
- Listen to participants' reactions and provide feedback to ensure that they understand the learning concept
- Observe participant's actions and coach them as needed
- Provide constructive and corrective feedback
- Keep discussions and scenarios on track for optimal learning and best utilization of time in the station
- Conduct a short debriefing after each scenario

Day of the Course

Arrive at least 30 minutes, prepared and ready to teach, prior to your scheduled teaching time. This allows you time to set up your station and receive updates and information from the Course Coordinator.

Complete Instructor activity report, reimbursement form, and return them to the course technician.

Universal Approach for Critical Patient Care

Steps	Patient Approach	Intervention	
Step 1	Notification of Patient Arrival	Alert team /Appropriate protocols /Consider resources	
Step 2	Immediate Control Immobilization	Restrain/ Immobilize Adequate lighting Appropriate work surface Receive EMS report	
Step 3 Team Leader	Initial (Primary) Survey '10 Seconds of Silence' Assess life threats Airway inadequate? Breathing inadequate? Circulation inadequate? Disability/LOC/Defib	Immediate transfer? Treat life threats Correct problems Control bleeding/Defib IV access/ Replace volume/ AVPU/GCS/DONT Sample history	A -Alert D-Dextrose V-Voice O-Oxygen P-Pain N-Narcan U-Unres T-Thiamine
Simultaneous Actions	↓ ↑		
Team Members	Assist Team Leader	Apply oxygen Gain exposure Obtain vitals/SAO ₂ ECG monitor IV access /Medications Obtain labs and x-rays Urinary catheter Dextrose evaluation Other	S=Signs/symptoms A=Allergy M=Meds P=Past med history L=Last meal E=Events
Step 4	Preliminary Impression →	Focused evaluation (secondary survey) ↕ Focused physical exam Diagnostic tests Diagnostic procedures	Focused Pathways as needed OB Neonatal Respiratory Cardiovascular Trauma Gastrointestinal/ Abdominal Altered LOC/ unknown
Step 5	Working Diagnosis/Ongoing Care/Disposition <div style="border: 1px solid gray; padding: 5px; width: fit-content;">No patient response or patient deteriorates—return to initial (primary) survey</div>	Refer to diagnostic treatment portals Continue to reassess Consultation Stabilization Disposition →	Admit Transfer Discharge
Step 6	Team Process Review	Team input/assess need for debriefing	

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Conducting a Station

Preparing your Station

- Set up your station – make sure you have the required equipment and supplies
- Confirm that equipment works properly
- Confirm that you can properly operate equipment required for the stations (i.e. Ultrasound, cardiac monitors, or computers)
- Review station objectives
- Review CALS curriculum

Scenario-Based Station

Conducting a scenario-based station: Briefly introduce yourself. Describe the objectives for the station. Remember that time for hands on skills practice is essential to the participants learning.

During a scenario-based station your responsibility is to coach the participants, not lecture them about specific skill or become involved in a time consuming discussion. Facilitate skills practice in the station and demonstrate only as required.

Provide the Team leader and other team members information about the case. The team leader must demonstrate management of the case using the CALS universal approach.

Be prepared to provide key elements about the case. If the team drifts from the objectives of the station, guide them back to the objectives. Provide hints or advice, but allow the team to work through the CALS universal approach under the direction of the participant playing the role of the team leader.

If you are a new instructor or teaching for the first time, you may want to work with an experience CALS instructor and have them conduct the first scenario.

Do not spend the full time in scenario-based practice. Allow adequate time for debriefing after each scenario. End the station in a timely manner and provide sufficient opportunity for discussion (American Heart Association, 2011).

Skills Station

Conducting a Skills station: Briefly introduce yourself. Describe the objectives for the station. Review or demonstrate how to use the equipment and/or procedure. Give each of the students an opportunity to practice and become familiar with the equipment and/or the procedure.

Scenarios are presented to the teams and active participation requires **Role playing and hands on demonstration of skills.** Minimal instructor guidance or input during the case based scenario. Teams are evaluated by CALS instructors and feedback is given after the completion of the validations. Other participants will observe and provide feedback after the completion of the validations

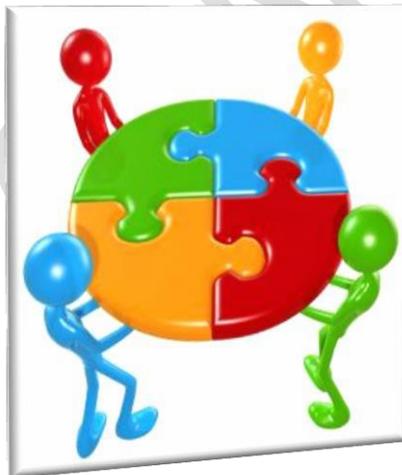
Conducting an Interactive Discussion: Briefly introduce yourself. Describe the objectives for the interactive discussion. Treat participants with respect and consideration. If a participant has a question the instructor can paraphrase the question so other participants can hear the question and to validate that the question was clearly understood. Avoid discussion that veer from the content to be covered, invite participants to come up after the session and arrange for a time to talk.

Effective Debriefing

Debriefing versus Feedback

Feedback is an informative process that evaluates a participant's action. The primary goal of feedback is to correct an action. Sometimes the correction of one mistake can result in other mistakes if the error is not fully understood.

Debriefing focuses on understanding the participant's behavior. The concept of debriefing allows for the correction of thinking. Most people act in ways that make sense to them. Good debriefing allows participants to analyze their own performance and achieve a deeper understanding of the situation. Reframing a participant's understanding will make the concept more applicable to real life; have more impact on performance and better retention of learning (American Heart Association, 2011).



Characteristics of an Effective Debriefing Session

- Active participation
- Learner discussion
- Self-Analysis
- Application
- Through processing of information

Qualities of a Debriefing Session

“A debriefing is a team-based activity or discussion to review shared experience in order to learn and achieve superior outcomes.

A debriefing should promote shared situational learning and coaching opportunities.

Debriefings are only useful when put in to practice with a commitment to improve patient safety and approve communication and teamwork among all team members

Remember not everyone sees the same event through the same eyes or perspective

Keep your debriefing quick and concise” (Briefing checklist poster, 2014).

3 – Step Format

Gather information about the events

Analyze the information using an accurate record

Summarize the attainment of the objective for future improvements

Debriefing Checklist

Review the following after each case, Keep it brief and include all members

1. What went well / not so well?
2. How can we improve for the next time?
3. Do we have the right tools at our facility?

Guidelines for Completion of the CALS Provider Course

The guidelines are for the completion of the two day CALS provider course only. Successful completion of the CALS program requires completion of the two day provider course and the trauma module or benchmark lab.

Guidelines for completion of the CALS Program: Successful completion of the CALS program requires completion of the two day Provider Course and the Trauma Module or Benchmark Skills Lab. These guidelines are for the completion of the two day CALS Provider Course only.

Philosophy:

CALS is committed to improving rural medical care by providing quality education designed for locations where technological support is limited, experience infrequent and specialized personnel unavailable.

Overview:

Guidelines are defined for successful course completion of the CALS Provider Course. Participants must successfully complete a multiple-choice examination, correctly demonstrate competency in the validation station and actively participate in the two day Provider Course.

Rationale:

Set specific criteria that define successful completion of the 2 day CALS Provider Course in order to receive a Provider Course completion card.

Goals:

Establish criteria to guide the Course Coordinator in determining if the participant has met the criteria for successful completion of the CALS Provider Course.

Validation Criteria:

See Module 5 for specific course validation criteria including attendance guidelines.

Course Set-up and Equipment

Classroom Set-up

MAIN CLASSROOM LECTURES

UNIVERSAL APPROACH

INITIAL MANAGEMENT
OF CRITICAL AIRWAY
AND BREATHING

ADULT AND PEDIATRIC
TRAUMA

ECG REVIEW

OB EMERGENCIES

MEDICAL
NEUROLOGICAL
EMERGENCIES

ENVIRONMENTAL
EMERGENCIES

CALS CRITICAL CASES
TOXICOLOGY
EMERGENCIES

SHOCK AND HEART
FAILURE

- Laptop computer w/AV adapter
- Projector
- Projector screen
- Podium if available
- Microphone if needed
- Laser pointer

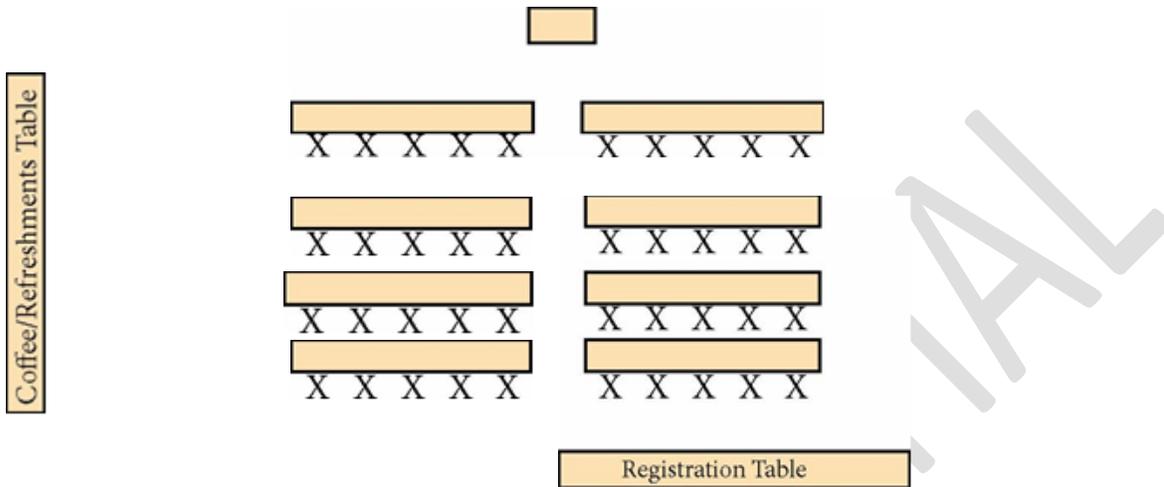
This room is used for the start of the CALS program and should be able to accommodate all the participants and the instructors. Room configuration should be set up in a classroom style. This provides the students with a place to take notes and have their materials.

Registration table can be available outside the room or in the back of the room depending on size. The registration table should have access to an outlet for a computer.

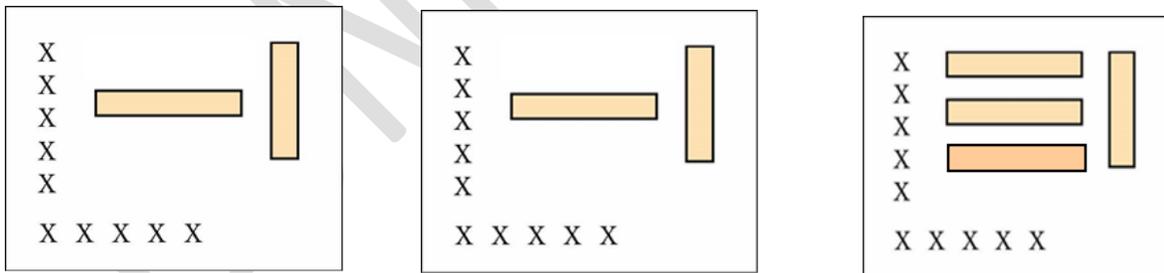
Three additional rooms should be available for stations. The main classroom can be used for 1 station if needed. Each station room should have two tables setup in a "T" formation. Cover each table with a sheet. Have 2 towels available at each station.

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Main Classroom



Three individual areas set up for each rotation



*Modifications may be needed depending on size of room/participant numbers.

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Station Equipment

**RSI
STATION**

Adult Manikin	1
Ambu bag with mask	1
Laryngoscope handle	1
Miller Blade appropriate for manikin	1
Mac Blade appropriate for manikin	1
Endo tracheal tube with stylets 6.5/7.0	2
Esophageal intubation detector BULB	1
Esophageal intubation detector WEE	1
ET introducer - bougie	1
Nasal airway	1
Oral Airway	1
Magill's Forceps	1
ET tube holder	1
Nasal cannula	1
non rebreather mask	1
suction yankauer	1
suction catheter (14 FR)	1
tongue blade	1
pulse oximeter probe	1
CO2 detector - colorimetric	1
bite block	1
Syringe 60cc (luer lock or slip tip)	1
king airway tube 3.0/4.0/5.0	1 of each
Nasal gastric tube	1
60cc cath tip syringe	1
Demo IV saline bag one liter	2
IV tubing	2
Pressure bag	2
IV catheter needle 20g/18g/16g	1 of each
stethoscope	1
BP cuff	1
Syringe 10cc	2
Syringes 30cc	1
EKG patches/electrodes	1 pack
Foley bag with foley	1
Peep valve	1

defib / pacer pads	1
C collar	1
RSI Drug Kit	1

**ADULT
STATION**

Adult Manikin	1
Ambu bag with mask	1
Laryngoscope handle	1
Miller Blade appropriate for manikin	1
Mac Blade appropriate for manikin	1
Endo tracheal tube with stylets 6.5/7.0	2
Esophageal intubation detector BULB	1
Esophageal intubation detector WEE	1
ET introducer - bougie	1
Nasal airway	1
Oral Airway	1
Magill's Forceps	1
ET tube holder	1
Nasal cannula	1
non rebreather mask	1
suction yankauer	1
suction catheter (14 FR)	1
tongue blade	1
pulse oximeter probe	1
CO2 detector - colorimetric	1
bite block	1
Syringe 60cc (leur lock or slip tip)	1
king airway tube 3.0/4.0/5.0	1 of each
Nasal gastric tube	1
60cc cath tip syringe	1
Demo IV saline bag one liter	2
IV tubing	2
Pressure bag	2
IV catheter needle 20g/18g/16g	1 of each
stethoscope	1
BP cuff	1
Syringe 10cc	2
Syringes 30cc	1
EKG patches/electrodes	1 pack
Foley bag with foley	1

Peep valve	1
defib / pacer pads	1
C collar	1

BRADY/TACHY
(ADD TO ADULT STATION)

Defibrillator / monitor	1
EKG simulator	1
Aminoderone	3
Epinephrine	1
Lidocaine	1
Adenosine	3
Atropine	1
AHA ECC	1

STEMI
(ADD TO ADULT STATION)

AED trainer	1
EKG simulator	1
Defibrillator / monitor	1
Aminoderone	3
Epinephrine	1
Lidocaine	1
AHA ECC	

ADULT MEDICAL
(ADD TO ADULT STATION)

EPI pens	6
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ADULT TRAUMA
(ADD TO ADULT STATION)

T POD pelvic binder	1
Towel pelvic	2
Sam pelvic splint	1
Quick clot	1
Hat warmers	1
ready heat blanket	1
CAT tourniquets	2

**PEDIATRIC
VALIDATION/
MEDICAL**

Full Body PEDS manikin	1
Ambu with mask (peds)	1
oral airway	1
nasal airway	1
laryngoscope handle	1
Miller blade	1
Mac blade	1
PEDS king airway #2.0, 2.5, 3.0	1 of each
syringe 30cc luer or slip tip	1
Yankauer suction	1
nonrebreather mask	1
peds magill forceps	1
peds oximetry probe	1
PEDS ETT holder	1
Esophageal intubation detector - WEE	1
PEDS LMA	1
Cuffed ETT tubes #3.5, 4.0	1 of each
PEDS NG tube	1
syringe cath tip 60cc	
CO2 detector - colorimetric	1
PEDS suction catheter (8 FR)	1
tongue blade	1
PEDS chest tube (10 FR)	1
Heimlich valve with tubing	1
Needle thoracostomy kit	1
PEDS bougie	1
stethoscope	1
Blood tube set	1
IV tubing set	2
Demo IV bag of saline	1
Pressure bags	1
PEDS BP cuff	1
Sams splint	1
glucometer	1
foley bag with foley	1
trauma scissors	1
gauze sponges	1 pack
PEDS c collar	1
twill tape	1 - 12" tape
syringes 10cc	1
syringes 3cc	1
IO needle	1
EZ IO drill	1
IO bone	1

IV catheters # 24g, 22g, 20g	1 of each
HCMC PEDS drug book	2
Broselow tape	1

**PEDIATRIC
AIRWAY
(ADD TO
PEDIATRIC
VALIDATION
STATION)**

Meconium aspirator	1
nebulizer set up	1
Demo nebulizer solution	1
Esophageal intubation detector - bulb	1

**PEDIATRIC
TRAUMA
(ADD TO
PEDIATRIC
VALIDATION
STATION)**

Demo skull	1
Trephine device	1
Rainey applicator	1
Rainey clips	8-10
periosteal elevator	1
nerve hook	1
skin for demonstration of Rainey clips	1
Demo bag of 20% mannitol	1
demo vial of 23.4% saline	1
Demo bag of 5% saline	1

**NEONATAL
CASE
SCENARIOS**

Infant manikin	1
warming pads	1
Neonatal ambu bag	1
bulb syringe	1
meconium aspirator	1
neonatal LMA	1
PEDS/Neonate CO2 detector	1
ETT tube with stylets	1
Adhesive Tape	1 roll
laryngoscope handle	1
miller blade	1
neonatal oral airway	1
glucometer	1
Demo IV bag	1
IV tubing	1
IV catheter	1
neonate pulse oximeter	1
neonate BP cuff	1
Neonate stethoscope	1
neonatal mask	1
EKG patched	1

PEDS feeding tube (5 FR)	1
butterfly needle	1
syringe 10 cc	1
Syringe TB	1
Syringe 3cc	1
pediatric blood tubes	1
Broselow tape	1
HCMC PEDS drug book	1
50% dextrose /D50 or D10%	1
Epinephrine	1

UMBILICAL LINE PLACEMENT	Umbilical Baby	2
	Umbilical stump for manikins	1
	Umbilical catheters	2
	medicine cups	2
	needle holder	2
	straight iris scissors	2
	Bent tip tweezers	2
	scalpel handle with 10 blade	2
	2-0 silk suture	2
	syringes 3cc	2
	syringes TB	2
	syringe 6cc	2
	Demo betadine swabs	2
	3 way stop cocks	2
	tegaderm	2
	twill tape	2
	sterile drape	2
Red dye for umbi babies w/syringe 60cc	1	

MECONIUM ASPIRATION INTUBATION (2 SET UPS)	Neonatal Airway heads	2
	Neonatal ambu	2
	ET tubes with stylets	6
	Meconium aspirator w/ suction tubing	2
	Neonatal LMA	2
	Laryngoscope handle	2
	Miller Blade	2

OB DELIVERY

OB delivery manikin w/neonate	2
<u>OB delivery kit Includes:</u> umbilical cord scissors nasal bulb suction latex free gloves umbilical clamps gauze sponges/pads diaper plastic bag drape/sheet	1
Baby Powder	1 small bottle
Towels	2
Vacuum Suction	1-2

VASCULAR ACCESS SKILLS

GE ultrasound w/ vascular probe	1
Sonosite ultrasound / vascular probe	1
Towels	2 - 4
Ultrasound gel	2
EZ IO:	
EZ IO needles kits with extension	1 of each size
EZ IO drill	2
manual IO needles	1
Intraosseous bones	1 of each site
Demo betadine swabs or Chloraprep swabs	2
EZ IO stabilizer device	2
Demo Lidocaine 2%	1
Syringe 10cc	2
Peripheral Guide IV:	
syringe 10cc	2 - 4
2 1/4 needle IV catheter	2 - 4
Blue phantom gel pads	2
Central line:	
<u>Central line kit includes</u> triple lumen catheter guide wire dilator introducer needles syringe 10cc	1
ultrasound probe sleeve	1
Central line Training manikin	1
Sharps container	1

AIRWAY TECHNIQUE S	Airway Techniques Station	
	Airway Head Adult	1
	Half head manikin	1
	Trachea Demo	1
	Ambu bag with mask	3
	Laryngoscope handle	2
	Miller Blade appropriate for manikin	2
	Mac Blade appropriate for manikin	2
	Endo tracheal tube with stylets 6.5/7.0	3
	Esophageal intubation detector WEE	1
	ET introducer - bougie	2
	*Nasal airway	1
	Magill's Forceps	1
	ET tube holder	1
	Nasal cannula	1
	suction yankauer	1
	suction catheter (14 FR)	1
	CO2 detector - colorimetric	1
	bite block	1
	Syringe 60cc (leur lock or slip tip)	1
	king airway tube 3.0/4.0/5.0	1 of each
	stethoscope	1
	*C pap/ BiPAP	
	*Oral Airway	1
	*non rebreather mask	
	*60cc cath tip syringe	
	*Nasal gastric tube	1
	Syringe 10cc	2
	*Peep valve	1
	*TTNV kit	1
	*Moonlighter device (w/cric kit)	1

* Remove items for Advance Intubation skills

**ADVANCED
INTUBATION
SKILLS**

Add Equipment to Airway Techniques Station	
Circ neck training block w/extra skins	1
Cricothyrotomy Kit (use Trauma Module kit)	1
Electronic CO2 detector	1
I gel	1 each size
ILMA #3	1
7.5 ILMA ET tube	1
ILMA tube extender	1
ETT tube #6	1
Supreme LMA	1
LMA #3	1
Syringe 20cc	1
AirTrach / AirTrach monitor (optional)	1
Glide scope (optional)	1
C-MAC (optional)	1
Airway spray lubricate	1 can

**TRAUMA
MODULE
TRAUMA MAN**

Trauma Man

Trauma Man system	1
Cric neck skins	1/group
Trachea skins, small squares	2-4 /group
Outer Chest skins	1/group
Red chest skins	1 /group
Waterproof drape	1
Additional Equipment for station:	
Cric Video	1
Ambu w/mask	1
Yankauer suction	1
Stethoscope	1

Needle Thoracostomy Tray

Emergency pneumothorax kit	
Heimlich valve with tubing	1
Demo Chloraprep	1
Demo Alcohol swab	1
Syringe 10 cc	1
15g catheter needle	1
Zip ties	2
tape roll	1
Additional equipment for station:	
2 or 3 way stopcock	1
18g IV catheter	1
4x4 gauze	1 pack
10g 3" needles	1

Pericardiocentesis Tray

8.3 FR pigtail or straight catheter	1
8.5 FR dilator	1
.035 guide wire (0.89 mm)	1
25g x 1" needle	1
18g x 3.5" access needle	1
18g x 5.9" access needle	1
Blade hander with #11 blade	1
syringe 10 cc	1
syringe 20 cc	1
syringe 60 cc	1
drainage bag	1
3 way stop cock	2

Double ended alligator clip	1
4x4 gauze	1 pack
Fenestrated drape	1
3-0 silk suture set	1
Demo Chloraprep	2
needle holder	1

Chest Tube Trays (2 set up)

Chest drainage system	1
Auto transfuser	1
needle holder	2
0 silk suture	2
Heimlich valve	2
Renal Clamp (optional)	2
Carmalt	4
scalpel handle with #10 or #11 blade	2
syringe 10cc	2
25g 1 1/2" needle	2
Demo chloraprep	2
sterile glove	2
chest tube 36 FR	2
blunt scissor	2
curved mosquito clamp	4
pick up with teeth	2
4x4 gauze	1 pack
banding gun	1
nylon ties	1
foam tape	1
petroleum gauze	1

TRAUMA
MODULE
FAST EXAM

Fast stimulator mat	1
Computer w/ simulator software	1
Ultrasound machine	1
Ultrasound Fast probe	1
Ultrasound Abdominal probe (optional)	1
Ultrasound gel	1
towels	2
Pillow w/pillowcase	1
Sleeping pad	1
Gel warmer (aka coffee cup)	1

warmer)	
Hand Sanitizer	1
Human Model	1

**TRAUMA
MODULE
TRAUMA PATIENT
ASSESSMENT**

Trauma Patient Assessment		1
Adult full size manikin		
Ambu bag with a mask		1
Nasal airway		1
Oral airway		1
Non rebreather mask		1
Suction yankauer		1
Suction catheter (14FR)		1
Pulse oximeter		1
Syringe 60cc		1
King airway tube 3.0/4.0/5.0		1 of each
Nasal gastric tube		1
Demo IV saline bag one liter		2
IV tubing		2
IV blood tubing		2
Pressure bag		2
IV catheter needle	20g/18g/16g	1 of each
stethoscope		1
BP cuff		1
EKG patches/electrodes		1 pack
Foley bag with foley		1
Sam splint		1
T pod pelvic binder		1
Towel clamps / sheet		2
C collar		2
Ace wrap		1
*Back raft		1
*Helmet		1
*Femur traction (sager, hare or Kendrick)		1
Trauma scissor		1
*Long back board		1
Quick Clot		1
Ready Heat Blanket		1

CAT Tourniquet	4
Hat warmer	1
* items used for helmet and traction splinting station	

**TRAUMA
MODULE
HELMET REMOVAL
AND TRACTION
SPLINTING**

Helmet removal and Traction splinting	
Back raft	
Helmet	
Femur traction (sager, hare or Kendrick)	
Long back board	

RSI KIT

Etomidate
Ketamine
Lidocaine
Atropine
Succinylcholine
Versed
Rocronium
Vecuronium
Epinephrine
Narcan
Ativan
Propofol
Magnesium Sulfate
3 way stop cock
Calculator
Pen light
Tongue blade
TB syringe
3cc syringe
Nasal atomizer
10cc syringe
Thermometer
Fentanyl
RSI card
Broselow tape

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Validation & Testing

Attendance

- The participant is required to attend both days of the Provider Course. Participants need to actively participate in the interactive discussions and demonstrate hands on practice at the skills and case-based scenarios simulation stations.
- If the participant misses three hours or more of the Provider Course, he or she will be required to attend another class within 3 months, complete the stations missed, and then take the written test.
- Recognition of successful course completion and issuance of a CALS Provider card may be withheld if the Course Coordinator, after discussion with the instructors and the Program Manager, feels a participant's conduct or overall performance was unsatisfactory. The participant will be advised of this decision by the Course Coordinator, and the participant will be contacted by the Program Manager for follow up and resolution.

Written Exam

- Written examination is closed book, participants may use RSI reference card, but cannot interact with each other during the exam.
- The course examination is 36 multiple choice questions. The participant must correctly answer 29 questions for a minimum passing score of 80%. Participant will be remediated by the coordinator directly if he or she misses 8 or more questions. The

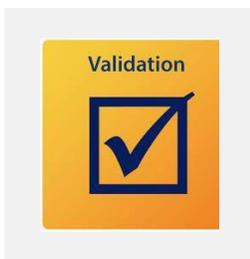


Course Coordinator will verbally go over each answer that was incorrect and allow the participant to demonstrate an understanding of the knowledge.

- If the participant successfully completed the validation skills but has missed 8 or more questions, he or she may elect to take an alternative examination immediately. Participants may elect to take the examination on a different date but it must be within the 2 weeks following the course. The alternate examination can be taken at the CALS office, at another CALS course location, or proctored by a CALS course liaison. Arrangements will be made with the Program Manager. Again, participant must pass the alternative examination with a minimum score of 80%. If the participant is unsuccessful on the alternative examination, he or she must report the course.

Validation

- Successful completion of the validation skills station requires:
 - Active participation in a clinical scenario and function as a team to provide emergency care to a simulated patient
 - Use the CALS Universal Approach
 - Identification of life-threats, and proper performance of appropriate interventions.
 - Provide self-evaluation and feedback to peers
- If the participant is not successful in the initial scenario, the team will be given immediate feedback, and a second scenario will be presented to the team.
- If the participant does not successfully complete the validation skills station he or she will be required to repeat the two day Provider Course within 3 months. Participant will receive a continuing medical education (CME) certificate if he or she attended both days of the CALS Provider Course; but will not receive a CALS Provider Course completion card.



Objectively Evaluating

- Follow the CALS validation checklist. Basic criteria for each step of the testing checklist are the content, principles, and actions that are taught in the CALS Provider Course.
- Do not coach, guide, or lead the team through the validation.
- Allow each participant to rely on team members for help. If a participant consistently hesitates or requires significant guidance throughout the validation this participant should be remediated at the end of the validation.
- Assure all participants are actively and realistically playing a role as a team leader or team member.
- Observe carefully and check off only those skills that you see the team appropriately demonstrate or verbally communicate among their team members.
- Do not allow the validation station to become a prolonged discussion about what should be done. Encourage realistic scenario with hands on skill being demonstrated in real time.
- Allow participants to direct actions that are appropriate to the scope of practice of the team and team members.
- Do not stop the validation to remediate a participant. If remediation of a participant is required, allow the team to complete the initial case scenario. The team will be given immediate feedback, and a second scenario will be presented to the team.
- Be fair, consistent, and as objectively as possible when testing. Quality of the CALS provider course is measured by the fairness and objectivity of testing.
- Stop the test when the team has identified all life threats and given an appropriate disposition for the patient.

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CALs Validation Checklist

Team Members Names: _____

Evaluators: _____

Expected Action	Yes	No	NA	Comments
Step 1-Notification of Patient Arrival				
* Team Alerted/ Resources identified/ Roles assigned				Is transfer activated Yes ___ No ___
Step 2-Immediate control & Immobilization				
Spinal control				Yes ___ No ___
Corrects active external hemorrhage				Tourniquet Yes ___ No ___ N/A ___
Takes EMS report?				
Step 3-Initial Survey: Assess Life Threats: Team leader				
Airway				
* Manages airway (BVM w/airway adjunct or intubate)				Verbalizes 10 sec of silence Yes ___ No ___
* If patient is intubated				Checks Airway Patency Yes ___ No ___
Confirms tube placement				RSI Meds Given correctly Yes ___ No ___
				C-spine Maintained Yes ___ No ___
				More than 1 method used to confirm tube Yes ___ No ___
Breathing				
* Assesses breathing effectiveness, identifies & corrects (pneumothorax, inadequate ventilations)				Needles Chest Yes ___ No ___ N/A ___
				Use Bag Valve mask effectively Yes ___ No ___
Circulation				
* Checks uncontrolled bleeding, and bleeding stopped				Checks for pulse Yes ___ No ___
* Identifies lethal cardiac dysthymias (cardioversion if unstable or defib if no pulse)				Starts CPR if needed Yes/No _
Disability/LOC				
* Assesses LOC (GCS, AVPU)				
Sample History				
* Exposes patient, gathers essential data for treatment				Keeps pt warm Y ___ N ___
Step 3-Initial Survey: Team Members				
IV or IO x2 / Oxygen/ Monitor				
Obtains vital signs, including temp				
Do the DON'T				
Fluid/ blood resuscitation				Numbered IV bags Y ___ N ___
Obtains labs				

Expected Action	Yes	No	NA	
Step 4- Preliminary Diagnosis/ Assessment				
* Performs secondary survey – Head to Toe				
Inspects the back				Log rolls or levitates patient Yes ___ No ___ NA ___
Corrects issues found on secondary survey				
If intubated was OG passed				
If chest needled was chest tube placed				
If fractures splinted – checked pulse				
Foley insertion				Empty foley after insertion Y ___ N ___
Step 5-States Working Diagnosis				
States frequent reassessments of *ABC, LOC, vital signs, and injuries				
If intubated was CXR done before transfer				
If intubated - appropriate post intubation plan				Paralysis Yes ___ No ___ Sedation Yes ___ No ___ Analgesia Yes ___ No ___
Consultation				
Disposition appropriate				
Uses CALS Patient Transport Algorithm				Team Leader Report Yes ___ No ___ Nurse Report Yes ___ No ___
Step 6-Team Review				
Team Input				
Overall Teamwork				

*Must identify and achieve all starred criteria

Peer evaluation of Team: (circle one) Very Good

Good

Needs improvement

Comments :

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Instructor Agreement

Definition of Instructor: A CALS Instructor is a medical professional who, having met the CALS Instructor Requirements, is a member of the CALS Instructor Pool. Members of that volunteer instructor pool may volunteer to be scheduled to teach at a CALS course. If scheduled for a course, he or she travels to the course location, delivers the CALS course content for which he or she was scheduled. Once the course ends, there is no further obligation on the part of CALS.

Course Materials: All CALS Course materials are the exclusive property of the Comprehensive Advanced Life Support Program. CALS materials include but are not limited to the CALS Provider Course manual, texts, instructor texts, instructor training materials, course presentation materials, videos, cards (e.g. RSI card) and other items prepared specifically for CALS.

Materials may not be reprinted without written permission of CALS Program Director. Instructors may not present any portion of the CALS Course unless it is an official program directly sponsored by the Comprehensive Advanced Life Support Program.

Consent and Release: From time to time photographs, videos, and/or audio clips may be taken of instructors and students engaging in Comprehensive Advanced Life Support (CALs) Program activities. These may be used for promotional brochures, promotion or a showcase of programs on its web site, promotion or a showcase of activities in newspapers and other not-for-profit purposes. I agree to give up my rights with regards to CALS Program photos, videos, and/or audio clips of me.

Instructor Indemnification: Unless otherwise prohibited by law, CALS, by resolution of the Board of Directors, shall indemnify any instructor against any and all expenses and liabilities incurred by him or her in connection with any claim, action, suit, or proceeding to which he or she is made a party by reason of being an instructor. However, there shall be no indemnification in relation to matters as to which he or she shall be adjudged to be guilty of a criminal offense or liable to the Corporation for damages arising out of his or her own gross negligence in the performance of a duty to CALS.

Amounts paid in indemnification of expenses and liabilities may include, but shall not be limited to, counsel fees and other fees; costs and disbursements; and judgments, fines, and penalties against, and amounts paid in settlement by, such director, officer, or employee. CALS may advance expenses or, where appropriate, may itself undertake the defense of any instructor. However, such instructor shall repay such expenses if it should be ultimately determined that he or she is not entitled to indemnification under this Article.

The Board of Directors shall also authorize the purchase of insurance on behalf of any instructor agent against any liability incurred by him or her which arises out of such person's status as an instructor, or agent, whether or not CALS would have the power to indemnify the person against that liability under law.

Worker's Compensation: If an instructor is scheduled for a course and provides instruction, he or she will be covered under the worker's compensation policy carried by CALS.

Instructor as Independent Contractor: The CALS Instructor is a medical professional, volunteers to provide CALS instruction from time to time, is paid an honorarium in exchange for the number of hours of instruction provided and is classified as an independent contractor. CALS does not provide the

instructor with employee-type benefits such as insurance, a pension plan, vacation pay or sick pay. CALS does not enter into a permanent relationship with an instructor; an instructor volunteer to provide instruction for a course and once the course ends, there is no further obligation on the part of CALS. The instructor is reimbursed as follows:

- **Honoraria** are paid for teaching time only. CALS requires that instructors complete and sign a W-9 which will remain on file in the CALS office. CALS will issue a 1099 to each instructor who receives \$600 or more in honoraria in a calendar year.
- **Mileage** is based on the most direct route from home to the training site. Mileage is reimbursed according to the IRS Annual Standard Mileage Reimbursement Rate.
- **Lodging** is reimbursed if travel must begin before 6:00 a.m. or would extend beyond midnight.
- **Meals** are reimbursable up to \$35.00/day. *Exception:* Instructors are expected to eat meals provided as part of the event. Meals purchased when otherwise available as part of the event are not reimbursable. Reimbursement requests must be accompanied by itemized receipts.
- **Additional expenses** must be approved in advance by the program director.

Your signature below indicates your acceptance of this agreement.

Print Name _____

Signature _____ Date: _____

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Conflict of Interest Disclosure

The CALS Program is required to have a signed disclosure form on file for CALS Instructors and Contractors.

Please complete section A or B below. A relationship or affiliation with a corporate organization having a direct interest in the subject matter of this course must be made known to the audience.

A. Non Declaration

I, the undersigned, declare that neither I nor any member of my family has a financial arrangement or affiliation with any organization(s) that may have a direct interest in the subject matter of the CALS course.

(Signature)

(Date)

B. Declaration

I, the undersigned, (or an immediate family member), have a financial interest/arrangement or affiliation with the following organization(s) that may have a direct interest in the subject matter of the CALS course as follows:

Affiliation/Financial Interest

Grants/Research Support

Consultant

Stock Shareholder (directly purchased)

Honorarium

Other financial or material support

Corporate Organization

(Signature)

(Date)

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Drug and Alcohol Policy

It is CALS desire to provide a drug-free, healthful, and safe workplace. To promote this goal, employees and instructors are required to be ready both mentally and physically to perform their jobs in a satisfactory manner.

Violations of this Policy include: the excessive use of alcohol; the illegal use or possession of drugs; and the use or possession of any drug that poses a safety hazard whether on CALS premises or in the course of conducting business for CALS. The use or possession of alcohol during a social function (e.g. CALS Provider Course Instructors gather for dinner at a restaurant after teaching for the day and order a glass of wine or other beverage containing alcohol) where the usage remains moderate is not a violation of this Policy.

Violations of this policy may lead to disciplinary action, up to and including immediate termination of employment or removal from the CALS Instructor pool, and/or required participation in a substance abuse rehabilitation or treatment program. Such violations may also have legal consequences.

Instructors with questions or concerns about substance dependency or abuse are encouraged to discuss these matters with the Program Manager or Program Director. Instructors are also encouraged to seek assistance or referrals to appropriate resources in the community.

Instructors with questions on this policy or issues related to drug or alcohol use in the workplace should raise their concerns with the Program Manager or Program Director without fear of reprisal.

CALS Instructor Acknowledgement

I _____ acknowledge that I have read and received a copy of CALS Drug and Alcohol Policy and will comply with it. I understand that any violation of this policy may be grounds for immediate removal from the CALS Instructor pool.

Instructor Signature

Date

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**Photo, Video, and Audio
Consent and Release Form**

From time to time photographs, videos, and/or audio clips may be taken of instructors and students engaging in Comprehensive Advanced Life Support (CALS) Program activities. These may be used for promotional brochures, promotion or a showcase of programs on our web site, promotion or a showcase of activities in newspapers and other not-for-profit purposes.

Select One:

By selecting this statement and signing this form, I consent to allow the CALS Program to use photos, videos, and/or audio clips that they have of me participating in CALS Program activities. Furthermore, by selecting this statement and signing this form I confirm that I understand and agree to the above request and conditions. Furthermore, I agree to give up my rights with regards to CALS Program photos, videos, and/or audio clips of me. I sign this form freely and without inducement.

By selecting this statement and signing this form, I DO NOT consent to the above request to have photographs, videos, and/or audio clips of me used in conjunction with any promotional items or purposes. I sign this form freely and without inducement.

My Contact Information:

Name (print): _____

Address: _____

City, State & Zip Code: _____

Phone Number: _____

Email Address: _____

Signature: _____ Date: _____

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CALS Instructor Candidate Evaluation

This form is used for 1) observing instructor candidates and providing feedback on performance and 2) coaching new instructors.

Instructor/Instructor Candidate:	Date:	Course Location:
Observing Instructor Name:	Station Observed/Monitored:	

Instructions: Observe and rate the instructor candidate based on the standards outlined in the table below.

4 = Exceeds expectations 3 = Meets expectations 2 = Needs improvement 1 = Below expectations

Standard	4	3	2	1	Comments
Used good voice – verbal quality (tone and speed)					
Eye contact – nonverbal quality					
*Presented material with clear objectives					
*Organized and concise delivery method (prepared)					
*Accurate scientific information presented					
*Complete coverage of CALS curriculum					
*Effective teaching style for a multidisciplinary group					
Encouraged student participation					
Provided supportive feedback					
Completed station on time					

Met or exceeded standard	Improvement areas for standard
---------------------------------	---------------------------------------

Discussion/Feedback Given to Instructor Candidates: ____ Yes ____ No

The Instructor/Instructor Candidate

- is recommended for entry into the CALS Instructor Pool, must score 3 or 4 in all starred criteria
- is recommended for remediation at another class, if he or she scores 19 - 24
- receive a score of 1 (below expectations) in 2 or more areas for a total score of 18 or below, will not be recommended for the instructor pool

Instructor Observer

Date

Instructor / Instructor Candidate

Date

(Signature acknowledges that this form has been reviewed with Instructor/Instructor)

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Instructor Evaluation

This form is used for 1) observing instructors and providing information on performance and 2) coaching new instructors.

Instructor/Instructor Candidate:	Date:	Course Location:
Observing Instructor Name:		Station Observed/Monitored:

Instructions: Observe and rate the instructor based on the standards outlined in the table below.

4 = Exceeds expectations 3 = Meets expectations 2 = Needs improvement 1 = Below expectations

Standard	4	3	2	1	Comments
Used good voice – verbal quality (tone and speed)					
Eye contact – nonverbal quality					
*Presented material with clear objectives					
*Organized and concise delivery method (prepared)					
*Accurate scientific information presented					
*Complete coverage of CALS curriculum					
*Effective teaching style for a multidisciplinary group					
Encouraged student participation					
Provided supportive feedback					
Completed station on time					

Met or exceeded standard	Improvement areas for standard
---------------------------------	---------------------------------------

Discussion/Feedback Given to Instructor: ____ Yes ____ No

- meets instructor criteria
- remediation recommended at another class, if he or she score 24 or below

Instructor / Coordinator Observer

Date

Instructor

Date

(Signature acknowledges that this form has been reviewed with Instructor/Instructor Candidate. It does not imply agreement with content).

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Instructor Activity Report

Name:	Date:	Course Location:
-------	-------	------------------

Instructions: Check either **T** = Teach or **O** = Observe. Check **only one** column for each station.

Station	T	O
Universal Approach		
Initial Management of Critical Airway and Breathing		
RSI		
Pediatric Airway		
Advanced Airway and Breathing		
Trauma Discussion		
Airway equipment Practice		
ECG Review		
Pediatric Medical		
Vascular Access		
Adult Trauma		
Med Neuro-stroke & meningitis		

Station	T	O
Peds trauma & Neuro resuc		
OB Interactive Discussion		
Neonatal Resuscitation		
OB delivery skills		
Environmental		
Shock and Heart Failure		
Brady & Tachy		
STEMI/V fib arrest		
Toxicology Emergencies		
Adult Medical		
Validation		

Thank you for serving as an instructor for this CALS Provider Course. Please help us improve the course by responding to the questions below.

Did you have the equipment & information needed to teach your station?

Which pieces of equipment, if any, need to be repaired?

Which pieces of equipment, if any, need to be replaced?

Did you have any problems with?

Scheduling

Lodging

Course communication

What are your recommendations for improving this course (content, delivery, other)?

Is this anything else you would like to add?

Return completed form to Course Technician

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Instructor Activity Report

Trauma Module

Name:	Date:	Course Location:
-------	-------	------------------

Instructions: Check either **T** = Teach or **O** = Observe for each procedure in the station that applies.

Stations	T	O
Station 1		
Cricothyrotomy		
Chest Tube		
Thoracostomy		
Pericardiocentesis		
Station 2		
Helmet Removal		
Traction Splint		
Station 3		
FAST Exam		
Station 4		
Trauma Patient Assessment		

Thank you for serving as an instructor for this Trauma Module. Please help improve the course by responding to the questions below.

Did you have the equipment and information needed to teach your station?

Which piece(s) of equipment, if any, need to be *repaired*?

Which piece(s) of equipment, if any, need to be *replaced*?

Did you have any problem with?

Scheduling

Lodging

Course communication

What are your recommendations for improving this course (content, delivery, other)?

Is there anything else you would like to add?

Return completed form to Course Technician

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TRAVEL REIMBURSEMENT REQUEST

Reimbursement will be in accordance with CALS policy (printed on reverse side). Please submit this form, with all receipts attached, within 30 days of completion of travel. Expenses over \$25 will not be reimbursed without a receipt, except for mileage reimbursement. All expenses should be itemized on this form regardless of their amount.

Name	Destination/Location	
Address	Business Purpose & my role	
City/State/Zip	Dates of travel	Phone # where I can be reached

Travel (Current IRS mileage rate or coach airfare whichever is lower):

	Amount	Donate to CALS*
Reimburse _____ miles traveled at current IRS rate of \$0.545 cents per mile	\$	Miles**
Parking	\$	\$
Coach Airfare (approved in advance)	\$	\$
Ground Transportation To/From airport	\$	\$

Meals (not to exceed \$35 per day for all 3 meals, receipt MUST BE ITEMIZED to receive reimbursement):

Date	Breakfast	Lunch	Dinner	Subtotal	Donate to CALS*
				\$	\$
				\$	\$
				\$	\$

Lodging & Other

	Amount	Donate to CALS*
Lodging (dates to/from)	\$	\$
Registration Fee (to represent CALS)	\$	\$
Miscellaneous (describe)	\$	\$
Miscellaneous (describe)	\$	\$

Total

TOTAL	\$	\$
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<i>This a fair and accurate list of my expenses for which I am requesting reimbursement.</i>	Signature	Date
<i>Reviewed and Approved by:</i>	Signature	Date

*CALs is a 501(c)3 charitable organization that provides life-saving education to rural healthcare providers. Your donation will be used to further that mission. A confirmation of your donation will be provided for your tax records.

**The IRS recognizes charitable mileage at \$0.14/mile – your contribution record will reflect the number of miles driven, not a dollar amount.

Return this completed form to: CALS Program, 717 Delaware Street SE, Suite 508, Minneapolis, MN 55414: Fax 612-626-2352

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CALS Travel Reimbursement Policy for Instructors

Subject to the limitations listed below, CALS will reimburse instructors for ordinary and necessary business and travel expenses incurred while delivering program services for CALS. All other activities will be approved on an individual basis in advance by the Program Manager.

Instructors are expected to be prudent in spending the funds of CALS and to keep records and receipts regarding the organizational purpose of those expenditures. Instructors should neither gain nor lose personally because they incur reasonable business expenses.

TRAVEL, TRANSPORTATION AND PARKING

When using a personal auto for conducting CALS business, mileage will be reimbursed at the current IRS rate. Only mileage between assigned business office or home location and business destination will be reimbursed.

When air travel is required in conducting CALS business, the least expensive class of airfare available (i.e., coach, economy, discount, etc.) will be reimbursed. Airfare is frequently priced based on how far in advance tickets are purchased. Instructors are expected to make reservations on a timely basis (i.e. 14 days or more in advance of travel) to prevent high airfares. To avoid potential penalties and change fees, every effort should be made to finalize travel dates and schedule times before a ticket is issued.

Travel to and from an airport (to a business destination, assigned office, or hotel) will be reimbursed. Parking expenses will be reimbursed when incurred while conducting CALS business and includes airport parking expenses incurred while traveling on CALS business.

The least expensive mode of transportation available will be reimbursed. For example, if an instructor chooses to drive to a destination rather than fly, but available airfare is cheaper than the mileage, the equivalent of the airfare (that meets the terms of this policy) will be reimbursed. Car rental or taxi service will be reimbursed only if it is the least expensive transportation available or if no other commercial transportation is available.

LODGING AND MEALS

When an overnight stay is required in the course of conducting CALS business, expenses for lodging will be reimbursed. Expenses for a night's lodging will be reimbursed if departure from home or business is required to begin before 6:00 a.m. or if following the activity, the return to the home or business would be after midnight. Lodging rates will be limited to that of a standard single room in a moderately-priced hotel.

Meal expenses will be reimbursed if incurred during travel on CALS business requiring an overnight stay. Meal expenses (including tax and gratuity) must be itemized and will be reimbursed up to the maximum IRS meal rate per day for the location. Charges for alcohol will not be reimbursed. Room service meals will be reimbursed to the same extent as other meals. If meals are included as part of the activity, instructors will not be reimbursed for meals during that time period. During CALS sponsored events, instructors are expected to eat meals already provided as part of the event if available and work schedules permit. Hotel and meal

charges for an instructor's personal guests should be tracked separately and will not be reimbursed.

SATURDAY NIGHT STAY

Current pricing in the airline industry often provides substantially reduced airfare if the trip includes a Saturday night stay. Instructors are not required to stay through Saturday night simply to achieve a cheaper airfare. If the total cost that would be reimbursed to the instructor (airfare, hotel nights, meals, parking, etc.) is cheaper due to lower airfare achieved with a Saturday night stay versus a non-Saturday night stay, instructors have the option of staying over a Saturday. However, time not spent on CALS business or travel is considered personal time. Instructors should seek advance approval from the Program Manager if they prefer the option of extending their stay.

MISCELLANEOUS

- Communication costs (phone, fax, expedited mail) are reimbursable if they relate directly to CALS business.
- Instructors enrolled in special mileage or hotel award programs may retain any benefits for their personal use; however, instructors must not book flights or hotel rooms that will be more costly to CALS in order to benefit from the award programs.
- Entertainment expenses that are not part of an official conference, program, or event will not be reimbursed.
- Incidental expenses, including items such as games, movies or between-meal-snacks, are considered personal and will not be reimbursed.

MECHANISM FOR REIMBURSEMENT

All requests for reimbursement should be made to CALS office using CALS Travel Reimbursement Form within 30 days of completion of the activity. Expenses over \$25 will not be reimbursed without a receipt, except for mileage reimbursement. All expenses must be itemized on the reimbursement form regardless of their amount. In accordance with IRS rules, instructors must keep careful records of business purpose, date, and locations for all expenses.