
Clinical Practice Guide

Bachelor of Science in Emergency Medical Sciences

**Prince Sultan Bin Abdul Aziz College for Emergency Medical Services
King Saud University**



Introduction:

Clinical practices will provide the student an opportunity to participate in the clinical/field environment and practice (under preceptor supervision) the skills they have demonstrated with proficiency in simulated education. They would be able to integrate theory and psychomotor skills developed to actual practice. There are 5 clinical practices distributed through the entire BS EMS Program. This will enable students to gradually build on their practical skills as they progress with class room and laboratory learning.



Glossaries

EMS: Emergency Medical Services

BS EMS:

Bachelor of Science in Emergency Medical Sciences

Preceptor:

Trained and designated health care provider, who supervise the students' performance during hospital and ambulance training.

Clinical Training: Hospital based training

Field Training: Ambulance based training

Program Director:

Program director is the overall in charge of BS EMS program development, implementation and evaluation of student performance.

Clinical Coordinator:

Clinical coordinator is the designated faculty member who plan, execute and monitor the clinical practices. He acts as a vital link between the college and the training sites. Also prepares the student's training schedule and monitor their attendance and performance progress during clinical practices.

Rx: Treatment

Dx: Diagnosis

BLS: Basic Life Support

ACLS: Advanced Cardiovascular Life Support

PALS: Pediatric Advanced Life Support

PHTLS: Prehospital Trauma Life Support

ITLS: International Trauma Life Support

IV: Intravenous

IO: Interosseous

SQ: Subcutaneous

IM: Intramuscular

ET: Endotracheal

OR: Operating Room

ER: Emergency Room

CCU: Cardiac Care Unit

ICU: Intensive Care Unit

PICU: Pediatric ICU

NICU: Neonatal ICU

PER: Pediatric Emergency Room

FBAO: Foreign Body Airway Obstruction

C-Collar: Cervical Collar

PASG: Pneumatic Anti Shock Garments

ETCO₂: End Tidal Carbon dioxide

NG: Nasogastric

OG: Orogastric

ECG/EKG: Electro Cardiogram

PCI: Percutaneous Coronary Intervention

BiPAP: Bilevel Positive Airway Pressure

CPAP: Continuous Positive Airway Pressure

PEEP: Positive End-Expiratory Pressure

AV shunt: Arteriovenous shunt

TCP: Transcutaneous Pacing

General Rules and Guidelines:

1. All students must complete the required number of hours per shift at assigned areas. Failing to do so, would require practicing additional required hours to pass the course.
2. The evaluation of clinical practice courses will be Pass or Fail. Each clinical practice course will have assessment criteria. Student has to fulfill all the evaluation criteria. Failure to fulfill even single evaluation criteria, by end of the semester, would require repetition of the respected clinical practice.
3. All skills assessment form entries should be validated by the preceptor and confirmed by the clinical coordinator/instructor.
4. Rarely practiced skills can be compensated through practice and testing at simulation lab (partially or completely), if a student fails to achieve the target numbers.
5. Target numbers for commonly practiced Skills such as IV, Patient Assessment, Oxygenation and Ventilation, must be completed during the clinical or field practice itself. Student will have to repeat or extend the clinical practice, if he fails to do so.
6. Medical director has the final authority to sign off the student competencies, based on the report received and verified from clinical preceptor, clinical coordinator and program director.
7. Every week student has to undergo clinical or field training for a day, minimum 9 hours/day.
8. Clinical coordinator and program director should verify completion of total required number of skills at end of the program from clinical practice I-V. Failing to complete the total required numbers by clinical practice-V, it will require extension of clinical practice V or competency testing at simulation labs, if it is a rarely practiced skill.

BS EMS Program Objectives that is partially or completely achieved through clinical practices:

		CP-I	CP-II	CP-III	CP-IV	CP-V
Psychomotor Skills						
1	Demonstrate use of documentation, information and communications technology in gathering, interpreting and communicating information and ideas for effective emergency patient care, transport and record keeping.	✓	✓	✓	✓	✓
2	Provide emergency medical care for the sick and injured, based on an assessment and the formulated field impression in order to reduce morbidity and mortality and improve overall health of the patient	✓	✓	✓	✓	✓
3	Demonstrate proficiency in safely performing all psychomotor skills within the Scope of Practice for an EMS specialist according to Saudi Commission for Health Specialties standards	✓	✓	✓	✓	✓
Interpersonal Skills & Responsibility						
4	Display leadership and management skills in emergency medical services with an ability to work collaboratively with multi-professional teams and contribute to the development of EMS Profession				✓	✓
5	Practice as an autonomous Emergency Care professional within framework of scope of practice, legal and ethical requirements	✓	✓	✓	✓	✓

Terminal Objectives from Clinical Practices:

Upon the successful completion of the field/clinical practice during the BS EMS Program, the student will be able to:

1. Perform complete assessments of medical and trauma patients in the emergency field and clinical setting as an entry level paramedic.
2. Apply diagnostic skills and devices within the paramedic scope of practice with the proficiency of an entry level paramedic.
3. Apply knowledge from paramedic studies to patient assessments and diagnostic findings to formulate an accurate patient impression and appropriate action plan.
4. Perform interventional skills within the paramedic scope of practice to the proficiency of an entry level paramedic.
5. Communicate effectively with patients, staff and provides accurate verbal and written patient care reports.
6. Engage at all times in professional behavior defined as being self-motivated, efficient, flexible, careful, confident and welcomed to constructive feedback.

Required number of skills at end of the program:

By end of the program student should complete:

	Skills	Minimum Target	Student Achieved
1.	Pediatric Assessment	30	
2.	Geriatric Assessment	30	
3.	Obstetric and Gynecologic Assessment	10	
4.	Psychiatric Assessment	20	
Adult Assessment- Total		135	
5.	Trauma Assessment	40	
6.	Chest Pain Assessment and Rx	30	
7.	Assessment and Rx of Respiratory Emergencies (Adult)	20	
8.	Assessment and Rx of Respiratory Emergencies (Ped)	10	
9.	Assessment and Rx of Abdominal Emergencies	20	
10	Assessment and Rx of Altered Mental Status Patients	15	
11	IV Access	30	
12	Medication administration	30	
13	ET intubation	05	
14	Supraglottic Airway	05	
15	Ventilation	20	
16	Team Leadership during Ambulance call	10	

Course Code	Name	Year and Semester	Training Site	Pre-requisite	Co-requisite
EMS 227 (0+0+3)	Clinical Practice-I	Year-2 Semester-4	Saudi Red Crescent Authority	EMS 211	EMS 223

Objectives:

Objectives	Assessment Criteria	Assessment Tool
1. Perform history and physical examination to identify acute complaints, provide emergency care and transport, within scope of practice of an Emergency Medical Technician.	1. Assess and document (Patient Care Report) minimum 10 patient and provide care within scope	1. Field shift evaluation form 2. Patient Care Report
1. Demonstrate professional behavior including: but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, professional communication, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.	1. Should receive 'satisfactory' evaluation by preceptor on all the professional attributes	1. Field shift evaluation form
1. Demonstrate Basic Cardiovascular Life	1. Successfully complete BLS provider certification	1. BLS course completion card.

Support (BLS) Skills in a given simulated scenario.	course	
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Course Code	Name	Year and Semester	Training Site	Pre-requisite	Co-requisite
EMS 314 (0+0+3)	Clinical Practice-II	Year-3 Semester-5	Hospital OR and IV Room	EMS 227 EMS 222 EMS 223 EMS 224	EMS 312

Objectives in addition to previous Clinical Practice:

Objectives	Assessment Criteria	Assessment Tool
2. Demonstrate proper use of advanced airway, ventilation and oxygenation devices.	1. Perform successfully advance airway skills in minimum 5 patients	1. ET Intubation-OR Evaluation form
3. Perform safe administration of medications through enteral and parenteral routes.	1. Establish minimum 10 parenteral routes (IV or IO) 2. Administer drugs through enteral or parenteral route in minimum 15 patients 3. Successfully complete IV course certification.	1. IV Room Evaluation Form 2. IV course completion certificate
4. Demonstrate Advance Cardiovascular Life Support (ACLS) Skills in a given simulated scenario.	2. Successfully complete ACLS provider certification course	2. ACLS course completion card.

Course Code	Name	Year and Semester	Training Site	Pre-requisite	Co-requisite
EMS 323 (0+0+3)	Clinical Practice-III	Year-3 Semester-6	Hospital CCU and ER	EMS 314 EMS 311 EMS 312	EMS 321

Objectives in addition to Previous Clinical Practice:

Objectives	Assessment Criteria	Assessment Tool
1. Perform the assessment and management of patients with medical emergencies including cardiovascular emergencies, based on knowledge of pathophysiology and epidemiology psychological impact presentation and prognosis of the disorder.	1. Perform comprehensive assessment and emergency management of medical emergencies on minimum 20 patients in addition to 20 cardiovascular emergencies.	1. Clinical Shift Evaluation Form 2. Patient Care Report
2. Perform advanced cardiovascular life support skills	1. Perform and Submit 10 monitory lead electrocardiograms 2. Submit minimum 15 , twelve or fifteen lead ECGs along with its clinical interpretation	1. Clinical Shift Evaluation Form 2. Patient Care Report

	3. Perform minimum 2 manual electrical therapies	
3. Observe cardiac catheterization procedure	1. Observe minimum 1 cardiac catheterization	1. Clinical Shift Evaluation Form
4. Demonstrate advanced prehospital trauma management skills in a given simulated scenario	1. Successfully completes advanced trauma provider (PHTLS or ITLS) certification	1. PHTLS or ITLS certification card.

Course Code	Name	Year and Semester	Training Site	Pre-requisite	Co-requisite
EMS 415 (0+0+3)	Clinical Practice-IV	Year-4 Semester-7	Saudi Red Crescent Authority	EMS 321 EMS 322 EMS 323	EMS 411

Objectives in addition to Previous Clinical Practice:

Objectives	Assessment Criteria	Assessment Tool
1. Perform comprehensive assessment and provide emergency care and transportation for patients of trauma emergencies.	1. Perform comprehensive assessment of 10 trauma patients	1. Field Shift Evaluation Form 2. Patient Care Report
2. Function as a team leader of a routine, single patient advanced life support ambulance call.	1. Function as a team leader at-least for 10 emergency calls.	1. Clinical Shift Evaluation Form 2. Patient Care Report
3. Demonstrate advanced pediatric life support (PALS) skills in a given simulated scenario	1. Successfully completes PALS provider certification	2. PALS Provider certification card.

Course Code	Name	Year and Semester	Training Site	Pre-requisite	Co-requisite
EMS 425 (0+0+3)	Clinical Practice-V	Year-4 Semester-8	Hospital ICU (4), PER (4), PICU (3), Psychiatric Hospital (4)	EMS 415 EMS 411	EMS 421

Objectives in addition to Previous Clinical Practice:

Objectives	Assessment Criteria	Assessment Tool
2. Perform comprehensive assessment and provide emergency care for the Neonatal and Pediatric Patients:	2. Assess minimum 10 pediatric patients	3. Clinical Shift Evaluation Form 4. Prehospital Care Report
3. Perform Comprehensive Assessment of Critically Ill Patients	2. Assess 5 critical care patients 3. Assess minimum 5 patients on ventilator	2. Clinical Shift Evaluation Form 3. Patient Care Report
4. Perform Comprehensive Assessment of psychiatric patients	1. Assess minimum 10 psychiatric patients	1. Clinical Shift Evaluation Form 2. Patient Care Report
5. Fulfill the total skills completion number requirements as mentioned in program skill completion log.	1. Completes all the skills requirement number by end of the program	1. Skill completion summary log.

Appendix-I

Skills students are trained to perform during Clinical Practice-I:

BCLS Skills:

1. CPR for all age groups
2. Removal of FBOA Obstruction

Airway and Breathing

1. Airway Maneuvers
2. Airway Adjuncts (Oropharyngeal and Nasopharyngeal Airways)
3. Positive Pressure ventilation
4. Supplemental oxygen therapy (Nasal Cannula, Simple Face Mask and Non-rebreather mask)
5. Humidifiers
6. Venturi mask
7. Airway Suction

Pharmacologic interventions:

1. Assist patients in taking their own prescribed medications
2. Oral glucose for hypoglycemia
3. Aspirin for chest pain

Trauma care:

1. Spinal Immobilization Devices (C-Collar, short and long spinal board etc.)
2. Rapid extrication
3. Bandaging and Splinting
4. Extremity Traction
5. PASG/MAST
6. Mechanical patient restraint

7. Tourniquet
8. Assessment and Management of Shock

Skills students are trained to perform during Clinical Practice-II:

Airway and Breathing

1. Supraglottic Airways
2. Tracheal-bronchial suctioning of intubated patient
3. Oral and nasal endotracheal intubation
4. Rapid Sequence Intubation
5. Perform Difficult Airway Management
6. Perform direct laryngoscopy
7. ETCO₂ monitoring
8. NG/OG tube

Pharmacological administration:

1. Establish and maintain peripheral intravenous access
2. Establish and maintain intraosseous access
3. Administer intravenous fluid therapy (bolus and infusion)
4. Sublingual
5. Subcutaneous
6. intramuscular
7. Nebulization
8. Enteral and parenteral administration of approved prescription medications

Clinical Assessment:

1. Perform a comprehensive history and physical examination
2. Formulate a clinical impression based on an analysis of comprehensive assessment findings, anatomy, physiology, pathophysiology, and epidemiology.
3. Relate assessment findings to underlying pathological and physiological changes in the patient's condition.
4. Performs basic and advanced interventions as part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the

patient.

5. Evaluates the effectiveness of interventions and modifies treatment plan accordingly.
6. Collect and report data to be used for epidemiological and research purposes.
7. Perform blood glucose monitoring.
8. Assessment and recognition of lung sounds

Skills students are trained to perform during Clinical Practice-III:

1. Use Cardiac Monitors
2. Perform Cardioversion
3. Manual defibrillation
4. Transcutaneous pacing
5. Vagal maneuvers
6. Obtain and Interpret monitory Lead ECG
7. Obtain and Interpret 12 and 15 lead ECG
8. Assessment and recognition of heart sounds
9. Perform health screening and referrals
10. Observe thrombolytic initiation
11. Observe PCI techniques

Skills students are trained to perform during Clinical Practice-IV:

1. Eye irrigation
2. Pleural decompression
3. Occlusive dressing of chest wounds
4. Perform adequate airway and intravenous management techniques to include intraosseous access for treatment of the burn patient.
5. Function as the team leader of a routine, single patient advanced life support
6. Assist the live child birth
7. Comprehensive Assessment and Management of Shock

Skills students are trained to perform during Clinical Practice-V:

1. Obtain blood sample
2. Maintain infusion of blood or blood products
3. Perform Needle Cricothyrotomy
4. Assist with Surgical Cricothyrotomy
5. Assists in assisted ventilation devices such as BiPAP, CPAP and PEEP
6. Demonstrate use of Manually-triggered ventilators
7. Assists with chest tube management
8. Assists in the management of patients with surgical airways
9. Assists with automatic ventilator setting and maintenance
10. Assists with wound drainage systems
11. Assists with the management of an arterial line system
12. Assists with patients that are hemodynamically monitored
13. Observe the insertion of Central Lines
14. Observe Balloon Pump management
15. Observe AV shunts and temporary renal shunts
16. Observe Urinary Catheterization

Appendix-II

Skills to be practiced in OR:

1. Assessment of Emergency Patients
2. Endotracheal Intubation
3. Assisted Ventilation (BVM, CPAP, BiPAP, PEEP)
4. Use of Mechanical Ventilators
5. Assist with chest tube management
6. Observe Central Line Insertion
7. Intravenous therapy

Skills to be practiced in ED:

1. Assessment of Emergency Patients
2. Insertion of IV and medication administration
3. Advanced Resuscitation Skills in all ages
4. Nebulization
5. Management of thoracic trauma (needle decompression/sucking wound etc)
6. Difficult Airway and IV insertion in Burn Patients
7. Obtain and interpret monitor and 12/15 lead ECG
8. Use of cardiac defibrillator monitors (defibrillation/cardioversion/TCP etc)
9. Observe Urinary Catheterization

Skills to be practiced in IV Room:

1. Insertion of IV
2. Medication Administration (IV, SQ, IM etc)
3. Obtain blood samples

Skills to be practiced in Ambulance:

1. Basic and Advance life support skills for all ages
2. Assessment and management of emergency patients of all ages
3. Basic and Advanced Airway management, ventilation and oxygenation techniques
4. Blood glucose monitoring
5. Spinal immobilization devices and techniques
6. Lifting and moving skills
7. Extrication Skills
8. splinting and bandaging skills
9. Collect and report data for epidemiological and research purpose
10. IV/IO insertion and medication administration
11. Function as the team leader of a routine, single patient advanced life support emergency call.

Skills to be practiced at ICU/CCU:

1. Comprehensive assessment of critically ill patients
2. Comprehensive assessment and emergency management of cardiovascular complains
3. Assessment and maintenance of ventilated patients
4. Obtain and interpret 12 lead ECG

5. Assists in assisted ventilation devices such as BiPAP, CPAP and PEEP
6. Demonstrate use of Manually-triggered ventilators
7. Assists with chest tube management
8. Assists in the management of patients with surgical airways
9. Assists with automatic ventilator setting and maintenance
10. Assists with wound drainage systems
11. Assists with the management of an arterial line system
12. Assists with patients that are hemodynamically monitored
13. Observe the insertion and maintenance of Central Lines
14. Observe Balloon Pump management
15. Observe AV shunts and temporary renal shunts
16. Observe Urinary Catheterization

Skills to be practiced at Psychiatric PER/PICU:

1. Comprehensive assessment and emergency management of pediatric patients
2. Perform pediatric advance life support skills
3. Perform pediatric advanced airway management

Skills to be practiced at Psychiatric Hospital:

1. Perform comprehensive assessment of psychiatric patients
2. Perform assessment of agitated patients

