

Emergency Medical Care Program

Clinical Objectives

EMC 483 & 484

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WESTERN CAROLINA UNIVERSITY

Department of Health Sciences

Cullowhee, NC

WESTERN CAROLINA UNIVERSITY

Emergency Medical Care Program

Clinical Objectives

General Objectives:

1. To develop an understanding and appreciation of the components of definitive in-hospital diagnosis and treatment of emergency and non-emergency patients.
2. To perfect communications and interpersonal relationships with patients and hospital staff.
3. To develop an understanding and appreciation of the role, capabilities and limitations of other members of the health care team.
4. Assist in promoting an understanding by other medical professionals concerning the role, capabilities and limitations of the paramedic.
5. Further develop practical skills in patient assessment and the invasive and non-invasive techniques of patient care.
6. Perfect communication and interpersonal relationships with both patients and hospital staff.
7. Develop skills in documenting patient histories, assessments, and interventions.

Specific Objectives

The specific objectives of the clinical experience are directly related to the objectives for each clinical rotation that follow.

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Emergency Medical Care Program

Clinical Objectives - Emergency Room, ICU, CCU

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Under the direct supervision of the clinical instructor or staff preceptor:
 - a. Assist in cases of cardiac arrest, including the performance of cardiopulmonary resuscitation, management of the airway and defibrillation/cardioversion*.
 - b. Perform endotracheal and nasotracheal intubation and direct laryngoscopy*.
 - c. Observe and, when appropriate, assist with carotid sinus massage*.
 - d. Obtain venous blood samples.
 - e. Prepare and administer oral, intramuscular, sublingual, topical, subcutaneous and intravenous medications and observe their effects.
 - f. Apply monitoring electrodes, observe cardiac monitoring and interpret dysrhythmias.
 - g. Develop skills in peripheral IV insertion and demonstrate an understanding of the principles of IV therapy.
 - h. Demonstrate the ability to calculate and to adjust IV flow rates during the parenteral administration of fluids.
 - i. Assist with triage to include appropriate vital signs, past and present medical history and initial intervention as appropriate.
 - j. Under supervision of the clinical instructor, assist with airway maintenance to include securing of the airway, oral and nasopharyngeal suctioning and oxygen administration as appropriate.

- k. Demonstrate the management of shock through the application, maintenance and removal of MAST* and the administration of drugs.
 - l. Perform orotracheal, nasotracheal, endotracheal, and oral suctioning*.
 - m. Insert Foley Catheters.
 - n. Insert nasogastric tubes and perform nasogastric lavage.
 - o. Apply and monitor pulse oximetry.
 - p. Perform and interpret results of capillary blood glucose monitoring.
 - q. Calculate dosages, administer, and monitor effects of IV medication infusions.
 - r. Observe and monitor the administration of blood and blood products.
- 2. Observe and document the effects of pharmacological agents administered.
 - 3. Observe, and when appropriate, assist in the application of an external pacemaker*.
 - 4. Observe and interpret 12 lead electrocardiograms.
 - 5. Further develop skills in patient assessment and use this information to make appropriate judgments in subsequent patient care.
 - 6. Observe central venous catheterization and other invasive emergency procedures.
 - 7. Observe and interpret the cardiac monitor.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

*Physician supervision required.

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Clinical Objectives - Neuro-Trauma ICU

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical faculty member. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

In addition to the general objectives listed under Clinical Objective - ICU, the following specific objectives relate to student rotation through the Neuro-Trauma ICU.

1. Become familiar with various components of the neurologic exam.
2. Relate specific respiratory patterns to neurogenic dysfunction.
3. Identify various positionings typical of neurogenic dysfunction.
4. Identify principles of care for patients with various neurologic dysfunctions and/or injuries.
5. Implement various acceptable descriptors for the assessment of coma.
6. Identify principles of patient care for the comatose patient.
7. Identify different types of seizure activity and principles of care for the patient experiencing seizures.
8. Under the supervision of the clinical instructor, administer medications used specifically for the treatment of neurogenic dysfunction and/or injuries.
9. Identify various signs and symptoms related to specific neurogenic dysfunction and/or injuries.
10. Assist in the care of the multi-system trauma patient.

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Clinical Objectives - Laboratory

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Develop skills in phlebotomy and demonstrate an understanding of the principles of phlebotomy including the selection of catheters, tubing, sites, etc.
2. Develop an understanding of the signs and symptoms of complications of phlebotomy and the appropriate methods for correction of these complications.
3. Develop skills in aseptic technique.
4. Perfect communication skills and interpersonal relationships with the patients, the patients' families and the hospital staff.
5. Develop skills in documenting patient assessments and interventions.

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Clinical Objectives - Respiratory Therapy

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Demonstrate an understanding of the principles of oxygen therapy and airway maintenance and become skillful with the various kinds of oxygen delivery and airway maintenance equipment and methods of artificial ventilation.
2. Develop skill in various airway maintenance techniques.
3. Assist in the administration of various pharmacological agents via the respiratory system and observe the effects of these agents.
4. Further develop skills in patient pulmonary assessment and use this information to make appropriate judgments about subsequent patient care.
5. Assist and review the airway treatment and maintenance of trauma cases and medical emergencies.
6. Perform oro-pharyngeal, nasopharyngeal and endotracheal suctioning.
7. Become proficient in the technique of drawing blood gases and interpreting the results.
8. Enhance respiratory assessment skills including chest auscultation.
9. Become proficient in the setup, maintenance, and operation of mechanical ventilators.

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Clinical Objectives - Cardiac Catheterization Laboratory

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students' activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Observe the technique of femoral artery puncture.
2. Observe the procedure for contrast injection.
3. Identify the relevant coronary artery anatomy during fluoroscopy.
4. Identify occlusions in coronary arteries.
5. Observe the procedure for inserting stents into occluded coronary arteries.
6. Observe the procedure of coronary angioplasty.
7. Observe the technique for administering intra-coronary thrombolytics.
8. Identify EKG changes consistent with myocardial injury, ischemia, MI, and reperfusion dysrhythmias.
9. Observe the effects of pharmacological agents administered.

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Clinical Objectives-Neonatal Intensive Care Unit

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students' activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Become familiar with various components of the physical assessment of the newborn.
2. Become comfortable with administering care to the newborn.
3. Compare normal and abnormal findings in the newborn.
4. Become familiar with the clinical knowledge and associated skills involving neonatal resuscitation.
5. Under the supervision of the hospital staff preceptor:
 - a. Demonstrate an understanding of the principles of oxygen therapy and airway maintenance including oral, oropharyngeal, endotracheal and nasopharyngeal suctioning, and oxygen administration up to 50%.
 - b. Perform CPR in a Code Blue situation.
 - c. Apply monitoring electrodes, observe cardiac monitoring and interpret rhythms.
 - d. Perform and interpret results of capillary blood glucose monitoring.
 - e. Assist in the insertion of orogastric tubes.
 - f. Demonstrate the ability to calculate and to adjust IV flow rates during the parenteral administration of fluids.
 - g. Review the set-up and monitoring of transportation isolettes.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

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Clinical Objectives – Pediatrics, PICU

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Further develop skills in patient assessment and use this information to make appropriate judgments in subsequent patient care.
2. Observe, assess and assist in the care of patients with as many childhood pathological conditions as possible including acute and chronic situations.
3. Under the direct supervision of the hospital staff preceptor, clinical instructor, or physician:
 - a. Observe the effects of pharmacological agents administered.
 - b. Administer oxygen via an endotracheal tube.
 - c. Perform history and physical assessments.
 - d. Apply monitoring electrodes, observe cardiac monitoring and interpret rhythms.
 - e. Perform CPR in a Code Blue situation.
 - f. Demonstrate an understanding of the principles of oxygen therapy and airway maintenance and become skillful in the management of the pediatric airway including oral and nasopharyngeal suctioning and the oxygen administration.
 - g. Review and document patients' signs, symptoms and treatment.
4. Observe the effects of pharmacological agents administered.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

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Clinical Objectives – Dialysis Center

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the dialysis center staff preceptor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Demonstrate a knowledge and understanding of the dialysis procedure.
2. Further develop skills in patient assessment and use this information to make appropriate judgments about subsequent patient care.
3. Observe the use of peripheral shunts and central venous catheters in the dialysis procedure.
4. Become familiar with the equipment utilized in the dialysis procedure.
5. Apply monitoring electrodes, observe cardiac monitoring, and interpret dysrhythmias.
6. Further develop skills in documenting patient histories, assessments, and interventions.
7. Observe and document the effects of the dialysis procedure.
8. Monitor dialysis patients.
9. Perfect communication skills and interpersonal relationships with patients, patients' families, and the dialysis center staff.
10. Develop an understanding of problems experienced by dialysis patients.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the dialysis center staff preceptor.

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Clinical Objectives - Outpatient Surgery

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students' activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Further develop practical skills in patient assessment and use this information to make appropriate judgments concerning subsequent patient care.
2. Develop skills in peripheral IV insertion and demonstrate an understanding of the principles of IV therapy.
3. When appropriate, observe surgical and exploratory procedures.
4. Administer and observe the effects of pharmacological agents.
5. Care for the induced coma patient and observe for signs at the various levels as the patient regains consciousness.
6. Monitor post-operative patients.
7. Perfect communication skills and interpersonal relationships with patients, patients' families and the hospital staff.
8. Develop skills in documenting patient histories, assessments, and interventions.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

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Clinical Objectives - PACU

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students' activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Further develop skills in patient assessment through the monitoring of post-operative patients and use the information obtained to make appropriate judgments concerning subsequent patient care.
2. Care for the induced coma patient including the monitoring of vital signs and observe for signs at the various levels of consciousness as the patient recovers.
3. Administer and observe the effects of pharmacological agents administered.
4. Perfect communication skills and interpersonal relationships with patients, patients' families and the hospital staff.
5. Develop skills in documenting patient histories, assessments, and interventions.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

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Clinical Objectives - Copestone

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical faculty member. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Develop skills in the assessment of the patient with psychiatric and/or emotional disturbances.
2. Assist in the care of patients with psychiatric and/or emotional disturbances.
3. Administer and observe the effects of specific psychiatric pharmacotherapeutics.
4. Observe and assist with the care of the patient receiving electroconvulsive therapy/ electroshock therapy.
5. Observe various psychiatric therapeutic modalities.
6. Observe and participate in multidisciplinary patient disposition meetings.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

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Clinical Objectives - Labor and Delivery

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Perfect communication and interpersonal relationships with the patient, the patient's spouse, family and hospital staff.
2. Demonstrate a knowledge and understanding of the physiology of pregnancy.
3. Under the direct supervision of the hospital staff preceptor:
 - a. Prepare and administer oral, intramuscular, subcutaneous and intravenous medications and be aware of the differences in neonatal drug doses.
 - b. Develop skills in the assessment of the pregnant patient and use this information to make appropriate judgments in subsequent patient care.
 - c. Apply monitoring electrodes, observe cardiac monitoring and interpret rhythms.
 - d. Assist in the application of the fetal monitor and interpret results.
 - e. Identify the signs and symptoms of the various stages of labor.
 - f. Recognize the signs and symptoms of fetal distress and assist with appropriate intervention.
 - g. Recognize the signs and symptoms of abnormal presentation, pre-eclampsia and eclampsia, and assist with appropriate intervention.
 - h. Assist in natural childbirth.
 - i. Observe Cesarean Sections.
 - j. Assist in the control of postpartum hemorrhage by uterine massage.

- k. Perform CPR in a Code Blue situation.
 - l. Demonstrate an understanding of the principles of oxygen therapy and airway maintenance including oral, oropharyngeal, endotracheal and nasopharyngeal suctioning, oxygen administration, and endotracheal intubation.
 - m. Assisting in the management of the newborn, including severing the cord, suctioning, maintaining body temperature, APGAR scoring, resuscitation and oxygen therapy.
- 4. Observe or perform peripheral IV insertion and demonstrate an understanding of the principles involved.
 - 5. Develop an understanding of an isolette/incubator, infant warmer, and phototherapy.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

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Clinical Objectives - Operating Room

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Demonstrate a knowledge and understanding of the principles of airway management and develop skills in oral airway insertion, endotracheal intubation, nasotracheal intubation, and assisted ventilation.
2. Further develop practical skills in patient assessment and use this information to make appropriate judgments in subsequent patient care.
3. Develop and perfect skills in peripheral IV insertion and demonstrate a knowledge and understanding of the principles of IV therapy.
4. Under the supervision of an Anesthesiologist or CRNA, administer and observe the effects of pharmacological agents.
5. Observe surgical procedures and techniques in order to better understand anatomy and physiology.
6. Observe cardiac monitoring and interpret dysrhythmias.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.

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Clinical Objectives - MICU

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the Paramedic preceptor. Students activities and observations need not be limited to those specifically defined in the objectives and will be left to the Paramedic preceptor's discretion.

1. Develop an understanding and appreciation of the components of definitive pre-hospital diagnosis and treatment of emergency and non-emergency patients.
2. Perfect communications skills and interpersonal relationships with patients and EMS staff.
3. Develop an understanding and appreciation of the role, capabilities and limitations of other members of the emergency medical care team.
4. Assist in promoting an understanding by other medical professionals concerning the role, capabilities and limitations of paramedics.
5. Further develop practical skills in patient assessment and the invasive and non-invasive techniques of patient care.
6. Integrate previously developed skills and knowledge into the patient situations encountered in the pre-hospital setting.
7. Develop competency in the following advanced life support skills:

- Endotracheal intubation
- Venipuncture
- IV administration
- IV drug administration (bolus or drip)
- Subcutaneous drug administration
- Intramuscular drug administration
- Sublingual drug administration
- Oropharyngeal suctioning

Tracheal suctioning
Defibrillation
EKG interpretation
Adult assessment
Pediatric & neonatal assessment
External cardiac pacing
Foley catheter insertion
Natural childbirth

8. Function as a member of a Mobile Intensive Care Unit by:
 - a. developing familiarity with the emergency medical care team's role and operation in the field setting;
 - b. becoming familiar with the supplies and equipment available on an MICU;
 - c. providing basic and advanced life support according to accepted protocols based on assessment and recognition of the patient's problem;
 - d. becoming familiar with the various forms of communication and reporting used in the pre-hospital setting.

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Clinical Objectives - Burn Center

Because of patient availability and appropriateness of individual cases, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced by the student under the supervision of the hospital staff preceptor or the clinical instructor. Student's activities and observations need not be limited to those specifically defined in the objectives and will be left to the hospital staff preceptor's discretion.

1. Observe admission procedure, particularly initial patient assessment and immediate care.
2. Identify the various types of burn injuries and calculate the total body surface burned (TBSA) using the rule of nines, rule of palms, and the Lund and Bowder chart.
3. Identify the immediate and long-term complications of burn injuries and their management. Relate the pathophysiology of these complications to the clinical presentations.
4. Assist in the management of burn shock including invasive monitoring techniques.
5. Observe and participate in the debridement of burn areas and the application of topical antibacterial agents.
6. Calculate the fluid needs of critically burned patients.
7. Relate derangements in laboratory values with the clinical presentation and pathophysiology of burned patients.
8. Observe the airway and ventilatory management of critically burned patients.
9. Observe an escharotomy and relate this procedure to the clinical presentation of the burned patient.
10. Review charts to identify specific risk groups for burn injuries.
11. Review charts to gain an appreciation of the long-term management of the burned patient.
12. Gain an appreciation for other types of injuries managed in the burn center including chemical burns, electrical burns, and frostbite.

Student activities and observations are not limited to those specifically defined above. Additional activities will be left to the discretion of the hospital staff preceptor.