

## Course Title: MOD6-MW360-Newborn Diagnostic Lab Tests & Procedures

**Credits:** 0.50

**Course Description:** screening tests commonly used during the neonatal period. Student will learn what the community standards and state laws are regarding indications for, administration of and the risks and benefits of prophylactic bio-technical treatments.

### Learning Objectives:

A: Student will be able to answer the Study Questions (below).

B: Student will be able to demonstrate thorough knowledge of the Clinical Skills required for this course (below).

C: Student will demonstrate thorough knowledge of the MANA Core Competencies for Midwives required for this course (below).

D: Student will be able to demonstrate knowledge of any new information in the area of study.

### Learning Activities:

I. Student Reads required texts.

II. Student Completes study questions.

III. Preceptor elaborates on study questions.

IV. Clinical Skills and Core Competencies training consists of the following (may take place at clinical visits or at childbirth education classes):

|                               |  |
|-------------------------------|--|
| 1. Preceptor Explanation of   | Safe, evidence-based midwifery care for the individual Clinical Skills and Core Competencies including etiology, sequelae, appropriate management and follow-up for the individual patient, appropriate times and reasons for consult and referral, access to relevant resources and information, complete, thorough and timely record keeping, appropriate, professional, and compassionate management of every task involved, receptiveness and responsiveness to patient's concerns. The Explanation will include a discussion of midwifery decisions and actions as they relate to possible outcomes and their wider impact, based on the Midwives Model of Care®. |
| 2. Preceptor Demonstration of |  |
| 3. Student Practice of        |  |
| 4. Student Demonstration of   |  |

V. Student researches and presents to the preceptor relevant latest developments in academic and clinical midwifery as relevant to the subject.

VI. Student/Preceptor discussion.

VII. Role-playing and Clinical Interactions: practice clinical interactions, assist with actual clinicals.

### Learning Materials / Resources:

(Please use textbooks less than 5 years old, or most recent edition)

1. Varney Burst, Helen. Varney's Midwifery. 4<sup>th</sup> Edition Jones and Bartlett Publishers. 2003.
2. Frye, Anne. Holistic Midwifery: A Comprehensive Textbook for Midwives in Homebirth Practice, Vol. 2: Care of the Mother and Baby from the Onset of Labor Through the First Hours After Birth. Labrys Press. 2004.

3. Weaver, Pam and Evans, Sharon K. Practical Skills Guide for Midwifery, 4<sup>th</sup> Edition. Morningstar Publishing Co. Wasilla. 2007.
4. MEAC Abbreviated NARM Skills Form.
5. MANA Core Competencies for Midwives
6. Midwives Model of Care®.
7. Internet links as needed for latest developments in midwifery care:  
[The Cochrane Collaboration](#)  
[EBSCO](#)  
[National Library of Medicine](#)  
[PubMed](#)  
[Medline](#)  
[SCIRUS](#)  
[Medscape](#)  
[World Health Organization](#)

### **Evaluation Tools / Methods:**

1. Answers to study questions: Student must achieve at least 80% correct to pass. The preceptor evaluates each answer for correctness and explains the questions that were incorrect. This counts for 85% of the final grade.
2. Clinical Skills: Student must demonstrate thorough knowledge of each skill. This counts for 5% of the final grade. *Academic courses CAN be completed without the student achieving "mastery" of each skill*, however the skills on the MEAC Abbreviated NARM Skills Form (which is a separate requirement) are not filled in until the student achieves Mastery\* of the skill.
3. MANA Core Competencies: Student's ability to apply MANA Core Competencies for Midwives in discussion to simulated and real-life situations. This counts for 5% of the final grade.

Evaluation of NARM Skills and MANA Core Competencies: The student demonstrates thorough knowledge to the satisfaction of the preceptor in the following areas:

*\*The student will be able to, in accordance with safe, evidence-based midwifery care, explain the condition, verbalize etiology and sequelae, verbalize appropriate management for the individual patient, follow up appropriately, consult and refer appropriately, access resources and information, accomplish complete, thorough and timely record keeping, appropriately manage every task involved correctly, professionally, and compassionately, while being receptive and responsive to patient's concerns. She/he will be able to explain her decisions and actions as they relate to possible outcomes and their wider impact.*

4. Student presentation of new information in area of study. The preceptor evaluates the correctness of the information presented. This counts for 5% of the grade.

### **Study Questions**

1. Define PO<sub>2</sub>, PCO<sub>2</sub>, pH, and base excess. Describe what the expected acid/base balance should be in the normal newborn and why.
2. Describe the occasions when acid/base balance in the newborn should be checked and why.

3. Discuss the actions that can be taken to correct metabolic and respiratory acidosis.
4. Describe the occasions when newborn hemoglobin/hematocrit should be checked and why. How is the test performed?
5. Discuss the expected fluctuations in the neonate's hematocrit from the 10-minute-old term newborn, to the 1 hour old, to the 1 week old. How does hematocrit in the term newborn differ from that in the premature newborn and why?
6. Discuss what actions can be taken to correct high hematocrit, low hematocrit.
7. Describe the function of glucose in the newborn. Discuss the expected range of normal glucose levels at birth and how they fluctuate in the first few hours of extrauterine life.
8. Describe the occasions when glucose levels in the newborn should be tested and why. How is the test performed?
9. Discuss the actions that can be taken to correct low glucose levels.
10. Discuss the purpose of knowing the baby's blood type and Rh. How is this test performed?
11. Discuss the difference between pathologic and physiologic neonatal jaundice. What are the expected bilirubin levels in the first 3-4 days of life?
12. Describe the occasions when bilirubin levels should be checked and why. How is the test performed?
13. Describe the actions that can be taken to correct high bilirubin levels.
14. Cite the expected calcium levels in the newborn and when it might be necessary to determine calcium levels. How is the test performed and what actions can be taken to correct abnormal levels?
15. Discuss the purpose of screening for phenylketonuria, homocystinuria, maple syrup urine disease, galactosemia, sickle cell anemia, and hypothyroidism twice within the first two weeks of life.
16. Discuss how metabolic screening tests are performed.
17. Explain what can be done to correct any of the above conditions.

## Clinical Skills (NARM Skills)

### **I. Midwifery Counseling, Education and Communication**

(1)-I A. Provides interactive support and counseling and/or referral services to the mother regarding her relationships with her significant others and other healthcare providers

(3)-I C. Provides education and counseling based on maternal health/reproductive/family history and on-going risk assessment

(6)-I F. Educates the mother concerning the natural physical and emotional processes of pregnancy, labor, birth and postpartum

(7)-I G. Applies the principles of informed consent

(8)-I H. Provides individualized care

(9)-I I. Advocates for the mother during pregnancy, birth and postpartum

I J. Provides education, counseling and/or referral, where appropriate for:

(11)-I J 2. Abuse issues: emotional, physical and sexual

(13)-I J 4. Diet, nutrition and supplements

(14)-I J 5. Effects of smoking, drugs and alcohol use

(15)-I J 6. Situations requiring an immediate call to the midwife

(16)-I J 7. Sexually transmitted diseases

(17)-I J 8. Complications

(18)-I J 9. Environmental risk factors

(19)-I J 10. Newborn care including normal/abnormal newborn activity, responses, vital signs, appearance, behavior, etc

### **II. General Healthcare Skills**

(21)-II A. Demonstrates Universal Precautions

(22)-II B. Demonstrates the application of OSHA regulations as they relate to midwifery workplace

(23)-II C. Demonstrates the application of aseptic technique

II D. Demonstrates the use of instruments and equipment including:

(28)-II D 5. Cord clamp and/or cord tape

(31)-II D 8. Gestation calculation wheel/calendar

(34)-II D 11. Lancets

(37)-II D 14. Needle and syringe

(45)-II D 22. Urinalysis strips

(47)-II D 24. Vacutainer/blood collection tube

### **VII. Well-Baby Care**

(149)-VII A. Provides well-baby care 2-6 weeks

(151)-VII C. Provides treatment for common newborn conditions such as cradle cap, diaper rash, thrush and colic

## Core Competencies (MANA Core Competencies for Midwives)

### **I. Guiding Principles of Practice.**

**The midwife provides care according to the following principles:**

1 H. Midwives recognize the empowerment inherent in the childbearing experience and strive to support women to make informed decisions and take responsibility for their own well-being.

1 J. Midwives synthesize clinical observations, theoretical knowledge, intuitive assessment and spiritual awareness as components of a competent decision making process.

1 K. Midwives value continuity of care throughout the childbearing cycle and strive to maintain continuous care within realistic limits.

1 L. Midwives understand that the parameters of “normal” vary widely and recognize that each pregnancy and birth is unique.

## **II. General Knowledge and Skills**

**The midwife provides care incorporating certain concepts, skills and knowledge from a variety of health and social sciences including, but not limited to:**

2 C. Community standards of care for women and their developing infants during the childbearing cycle, including midwifery and bio-technical medical standards and the rationale for and limitations of such standards

2 M. The ability to develop, implement and evaluate an individualized plan for midwifery care.

2 N. Woman-centered care, including the relationship between the mother, infant and their larger support community.

2 O. Knowledge and application of various health care modalities as they apply to the childbearing cycle

## **IV. Care During Labor, Birth and Immediately Thereafter**

**The midwife provides health care, support, and information to women throughout labor, birth and the hours immediately thereafter. She determines the need for consultation or referral as appropriate. The midwife uses a foundation of knowledge and/or skill which includes the following:**

4 B. Parameters and methods for evaluating maternal and fetal well-being during labor, birth and immediately thereafter, including relevant historical data.

4 L. Understanding of and appropriate support for the newborn's transition during the first minutes and hours following birth.

## **VI. Newborn Care**

**The entry-level midwife provides health care to the newborn during the postpartum period and support and information to parents regarding newborn care. She determines the need for consultation or referral as appropriate. The midwife uses a foundation of knowledge and/or skill which includes the following:**

6 A. Anatomy, physiology and support of the newborn's adjustment during the first days and weeks of life

6 B. Parameters and methods for evaluating newborn wellness including relevant historical data and gestational age.

6 C. Nutritional needs of the newborn.

6 D. Community standards and state laws regarding indications for, administration of, and the risks and benefits of prophylactic bio-technical treatments and screening tests commonly used during the neonatal period.

6 E. Causes of, assessment of, appropriate treatment and emergency measures for neonatal problems and abnormalities.