

Pharmacology for Midwives

Study Group Module

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Pharmacology for Midwives

Description:

This module explores pharmacological agents appropriate to pregnant people and the implications in out-of-hospital care. It includes recommended reading materials in print and online, and asks students to complete short answer questions for assessment, long answer questions for deeper reflection, and learning activities/projects to deepen your hands-on direct application of key concepts.

Learning Objectives:

- Become familiar with the various reference materials available for consultation regarding pharmacology.
- Understand drug safety and lactation safety categories.
- Identify the distribution and regulation of fluid within the body.
- Identify the basic structure and function of the circulatory system.
- Identify the medications commonly used in obstetric, midwifery, and newborn care, the applications and risks of these medications.
- Identify the mechanism, effects, and metabolic excretion of the medications commonly used in obstetric, midwifery, and newborn care.
- Identify steps for safe handling, identification, and administration of medications appropriate to midwifery.
- Identify the over-the-counter medications your clients will likely encounter.
- Learn how to identify the over-the-counter medications considered appropriate for use in the childbearing cycle.
- Identify the appropriate syringes and needles for practical midwifery application.
- Identify the appropriate equipment and supplies for administering IV fluids in a midwifery home birth setting.
- Identify the appropriate use of IV fluids administration in a midwifery home birth setting.
- Consider the possible adverse effects of administering IV therapy to pregnant or laboring women.
- Identify the recommended immunization schedule for infants.
- Identify the legal requirements and limitations of the midwifery license regarding the use of medications and IV administration in your state. Cross reference this with the national certification, NARM CPM.
- Draft practice guidelines for the use of medications in your own practice.

- Draft practice guidelines for the use of IV fluids in your own practice.
- Demonstrate use of appropriate medications within the context of your preceptor's practice.

Learning Activities:

- Research and read appropriate study sources, seeking out additional study sources where needed
- Complete short answer questions in attached module document for assessment
- Complete long answer questions for deeper reflection in attached module document for assessment
- Complete learning activities listed in attached module document for assessment
 - Read drug insert information and reflect on information
 - Obtain the IV equipment and practice skill
 - Obtain a copy of the midwifery license law and rules & regs
 - Draft practice guidelines for the use of medications
 - Draft practice guidelines for the use of IV fluids
 - Draft practice guidelines for the screening of ABO and RH factor
 - Create reference card of medications and dosages
- Submit work to Study Group Course Coordinator
- Reflect on feedback from Study Group Course Coordinator and re-submit work as needed

Study Sources (print):

Use keywords from the Learning Objectives to search the table of contents and index of the required reading listed below. Read those pages listed, and read the chapter in which they are found. Establish a context for the information so that you understand how other topics are related. In addition, flip through each text to familiarize yourself with the content of chapters. As you work through Study Group modules, you will eventually read each text in its entirety.

Required Reading (print):

- Varney's Midwifery, 6th edition
- Myles Textbook for Midwives, 17th edition

Optional Reading:

- Anti-D in Midwifery: Panacea or Paradox?, Wickman
- Pharmacology for Women's Health, Brucker & King

Study Sources (online):

See NMI website Pharmacology For Midwives module web resources section for current online study sources for this module.

Related Modules:

- First Stage of Labor

- Second Stage of Labor
- Third Stage of Labor
- Placenta
- Breastfeeding / Chestfeeding
- UTI
- Liver
- Spontaneous Release of Membranes
- Birth Bag and Set Up
- Cesarean and VBAC
- Fertility and Conception
- General Pregnancy and Postpartum Ailments
- Hemorrhage
- Herpes
- Hypertension
- Apnea/Hypoxia/Respiratory Distress
- Perinatal Mental Health
- Postdates Management and Postmaturity
- Pre-eclampsia
- Preterm Labor
- Substance Use and Abuse
- Lifelong Reproductive Healthcare

Submitting Module for Assessment:

Study Group modules are accepted electronically in PDF format *only*. We encourage you to submit modules as you complete them throughout each quarter of enrollment.

Please e-mail your completed Study Group module to:

Study Group Course Work Instructor nmistudygroup@nationalmidwiferyinstitute.com

Once your module has been emailed to us, you will receive an email confirmation that we have received it. Study Group modules are reviewed and returned in digital format as PDF documents. Modules can take up to 1 month from submission to be reviewed and returned to you. We will return your module as an e-mail attachment. Each module includes an Evaluation Sheet at the end of the pdf. The module's page on the student portal also includes a link to a fillable online module evaluation sheet. Please take the time to fill out the module evaluation sheet and return it to us for each module, it helps us to improve our course work.

Please follow these formatting guidelines when submitting modules:

- Your first initial and last name in title of PDF, along with name of module. Example: "ERyanFirstStage.pdf"
- Title of module on the document's front page
- Your name on the document's front page
- Provide the text of each question, followed by a blank line and then your thoughtful answer (without the question, you have commentary without context)

- Blank line between the answer for a question and the next question: question, blank line, answer, blank line, question, blank line, answer...
- Please leave margin space for our comments!
- Don't use script or cursive writing style text
- Font size not smaller than 12
- Credit sources of direct quotes

Completion Requirements and Feedback:

In order to complete this module for graduation purposes from National Midwifery Institute you must review all resources, complete the attached short answer questions for assessment, long answer questions for deeper reflection, and learning activities/projects, and submit them as detailed above. Upon return to you, your coursework may have feedback or ask for additional information or exploration on certain topics. Your work will be evaluated based on the following Rubric (pasted below). You must achieve a minimum score of **7.5** in order to move on to your next module, though we encourage all students to strive for a **10**.

	Level 1 (0 Points) Not Adequate	Level 2 (1 Point) Developing Adequacy	Level 3 (1.5 points) Meets Basic Expectations	Level 3 (2 points) Exceeds Expectations	Student Score
Completion of module prompts and elements	-Module not completed	-Major Elements of module are missing	-All aspects of module elements present, with some minor questions unanswered or missing	-All aspects of module elements present and answered completely	
Demonstrates Comprehension of module content and concepts	- Lack of comprehension	- Responses are unclear and do not reflect basic comprehension of module concepts	- Responses are clear and reflect basic comprehension of module content and concepts	- Responses are clear, well written, and reflect in-depth comprehension of module content and concepts. Added subpoints and additional reflections demonstrate a deeper knowledge and curiosity.	

<p>Analysis</p>	<ul style="list-style-type: none"> - Key terms not defined 	<ul style="list-style-type: none"> -Inaccurate definitions of key items -Limited connections made between evidence, subtopics and clinical experience 	<ul style="list-style-type: none"> -Accurate definitions of key items -Connections made between evidence, subtopics and clinical experience -Incorporation of original ideas and incorporates some clinical experience in responses where possible 	<ul style="list-style-type: none"> - Accurate definitions of key items -Strong connections made between evidence, subtopics and clinical experience 	
<p>Evidence</p>	<ul style="list-style-type: none"> - No research evidence used 	<ul style="list-style-type: none"> -Research not used -Research not clearly connected to questions asked in module 	<ul style="list-style-type: none"> -Research is present but limited -Research presented is weak or not relevant to communities served by midwives 	<ul style="list-style-type: none"> -Research is abundant -Research is compelling and relevant to communities served by midwives 	
<p>Engagement with Learning Resources</p>	<ul style="list-style-type: none"> -Evident study sources were not utilized 	<ul style="list-style-type: none"> -Evident study sources were partially utilized 	<ul style="list-style-type: none"> -Evident that study sources were fully utilized 	<ul style="list-style-type: none"> -Evident that study sources were fully utilized and independent research was undertaken -Full incorporation of original ideas, personal analysis and incorporates relevant clinical experience in all areas possible 	

Skills

Following are Skills Logs which meet MEAC and NARM requirements for assessment of clinical readiness for entry-level practice upon graduation. Review the skills in each of the skills logs and consider how they each relate to the content of this module. If you are currently working with a preceptor, take this opportunity to focus on these areas. During Supervised Primary Care you will formally evaluate these skills together using the NMI Complete Skills Logs: Prenatal Skills Log, Labor & Birth Skills Log, Newborn Exam Skills Log, Postpartum Skills Log, and the Additional Skills Log. To Download the Complete Skills Logs go to the [Apprenticeship Page](#) on the Student Portal.

Introductory and Further Thoughts:

Scope of practice for midwives in a variety of states/provinces/areas/jurisdictions may or may not provide for midwives to carry, administer, or prescribe medications. They also may or

may not make allowances for midwives to administer medications orally, sublingually, by injection, or by IV. While these may not be in scope in your area, we know many midwives may not exclusively work in one area their entire career and we expect all students to demonstrate basic pharmacological knowledge

Pharmacology For Midwives

National Midwifery Institute, Inc.

Study Group Coursework

Module Submission Attestation

All students must complete **one attestation form along with each module submission**. This reminds students of submission guidelines and expectations. It is also an NMI graduation and MEAC requirement. Please put your name, read the fine print, and check each box as indicated. Thank you!

First and Last Name:

Email:

I have submitted my module by email (required)

I have emailed my module to nmistudygroup@nationalmidwiferyinstitute.com. I have made sure I followed submission and formatting instructions carefully, as outlined in the module syllabus. I have submitted a .pdf document, and all project attachments as requested.

I have read the fine print. I have emailed my module.

The work I have submitted is my original work (required)

I have not plagiarized my work, rather, my work is in my own words and reflects my own unique ideas. When sourcing ideas from others, I have quoted, cited, and/or attributed their ideas properly. If there is any question about the originality of my work, a Study Group Coursework Coordinator will contact me.

I have read the fine print. I certify that I have submitted original work.

I have submitted a module feedback form (required)

I understand I must submit at least ten module feedback forms throughout my time completing Study Group Coursework. These module feedback forms solicit student feedback in order to improve modules and keep them relevant and up-to-date for optimum student education.

Yes, I submitted a module feedback form for this module

- No, I have not chosen to submit a module feedback form for this module.

Pharmacology For Midwives

National Midwifery Institute, Inc.
Study Group Coursework
Short Answer Questions

Short Answer Questions:

Overall Questions about Medications

1. List the medications appropriate to out-of-hospital midwifery care, indicate the application for each, and how each is administered.
2. Describe the FDA classifications drug warning labels:
 - a. How do you determine the drugs class
3. In determining the need for any particular intervention in birth, including medication administration, what does the acronym B.R.A.I.N. stand for and how can it be used with clients?
4. Describe how to administer medications by the following routes:
 - a. intravenous (IV)
 - b. intramuscular (IM)
 - c. subcutaneous
 - d. oral (PO)
 - e. sublingual (SL)
 - f. buccal
 - g. vaginal (PV)
 - h. rectal
5. Translate the following short-hand terminology:
 - a. bid
 - b. tid
 - c. qid
 - d. q2h
6. When/Why is it critical to check the name and date of a medication?
7. Give instructions for opening a glass ampule (vial).
8. When administering medications, how do you chart your administration? Do you record administration site, route, medication lot #, expiration?

9. What resource(s)/reference(s) do you personally utilize when discussing or recommending over-the-counter medications with clients?
10. How is a C/S (culture/sensitivity study) used to prescribe medication?
11. Describe the administration of an epi-pen (epinephrine). Why is it important to always carry an epi-pen?
12. Describe common symptoms of an allergic reaction, and when diphenhydramine or epinephrine would be indicated.
13. How quickly does an allergic reaction usually manifest? How long does it take diphenhydramine or epinephrine to be effective?

Medications used in Pregnancy

14. How do you know if a drug is safe for use in pregnancy?
15. For each of the following conditions (numbered below), answer the following:
 - a. choose *one common medication* recommended to treat this?
 - b. Are these common medications safe in pregnancy?
 - c. What is the classification of these drugs in pregnancy?
 - d. How is this drug absorbed in the body? does it cross the placental barrier?
 - e. What common side effects may you see during its use?
 - f. What reactions might you see that tell you to discontinue its use?

You may also reflect on any personal or professional experience working with these medications.

1. Vaginal yeast infections
 2. Headaches
 3. Cold and Flu
 4. Cough
 5. Diarrhea
16. What is the medical/pharmacological treatment for herpes? When does this start in pregnancy?
 17. How is magnesium sulfate used in pregnancy? Under what circumstances? How is it administered?
 18. Why would antibiotics be prescribed in pregnancy? How do you know if an antibiotic is safe in pregnancy?
 19. Discuss antiretroviral (ARV) therapy in pregnancy.
 - a. What are safe ARV drug regimens for pregnant HIV-infected individuals?
 - b. How does ARV therapy reduce mother(parent)-to-child transmission?
 - c. What are the risks of ARV to babies?

20. Discuss SSRI use in pregnancy. What common SSRIs are used in pregnancy? What is their safety during pregnancy? Is there any risk to the newborn at birth?

Medications used in Labor

21. Which pharmacological options do we have for halting labor? Why would we want to halt labor?

22. Why might antibiotics be administered during labor? Which antibiotics? How would you administer it? On what schedule?

Medications used in labor in the hospital

23. The following medications (numbered below) are typically used for induction of labor in the hospital. For each medication, describe:

- a. How it is administered
- b. How it works in the body on a cellular level
- c. What doses are commonly used
- d. Common side effects or risks with taking the medication
- e. How it can be stopped/removed if experiencing poor side effects also reflect on any personal or professional experience with these medications.
 1. Cervidil or other cervical ripening agents
 2. Pitocin
 3. Misoprostol

24. Describe how Pitocin is used to augment labor contractions.

25. The following medications (or medication types) (numbered below) may be used for pain relief in labor in a hospital. For each medication, describe:

- a. How it is administered
- b. How it works in the body on a cellular level
- c. How effective is the pain relief it typically provides?
- d. Is there a common dilation window at which it can/cannot be administered?
- e. Common side effects or risks with accepting the medication
- f. How it can be stopped/removed if experiencing poor side effects also reflect on any personal or professional experience with these medications.
 1. Morphine
 2. Narcotic analgesics
 3. Epidural analgesia
 4. Spinal analgesia

IV Administration

26. Under what circumstances in pregnancy, labor, and postpartum would you administer an IV?

27. List the supplies needed for IV administration.

28. List step-by-step how you start an IV.

29. What is an air embolism? What are the symptoms of an air embolism? How do you respond to symptoms of an air embolism?

Medications used Postpartum for your Client

30. When managing a postpartum hemorrhage, what are your pharmacological options or tools for treatment? Which do you go to first? Which second? Third? Which can be used to help expel the placenta and which must be used once the placenta is out?

31. When would we administer Lidocaine? In what percentage?

32. What may a newly postpartum client take to help ease after pains?

33. Discuss Rhogam and Rhogam administration.

- a. Why is Rhogam administered?
- b. How is Rhogam stored?
- c. How is Rhogam packaged?
- d. How is it administered, and when?
- e. Why might a client decline Rhogam? How do you counsel clients about declining Rhogam?

34. What must you consider when informing a breastfeeding/chestfeeding client of their medication options?

35. What are the Lactation Drug Risk Categories?

Medications used Postpartum for a baby

36. Discuss Vitamin K and Vitamin K administration.

- a. Why do we administer Vitamin K?
- b. What are the routes of administration for Vitamin K?
- c. What is the proper dosage for the different routes of Vitamin K administration?
- d. Why do some clients decline Vitamin K administration?

37. Discuss newborn ophthalmic ointment.

- a. What is the application of newborn ophthalmic medication intended to prevent?
- b. How effective is it at preventing what it's intended to prevent?
- c. How is it administered? In what dosage?
- d. Why do some clients decline newborn ophthalmic ointment?

38. Where do you find the recommended immunization schedule for infants in your country?

Projects (send completed projects with the rest of your course work for this module)

(number continued from previous section).

39. Read and consider the entries in a drug guide for all the medications that you listed in above questions. What information did you find surprising?

40. Obtain the IV equipment/supplies necessary for IV administration. Practice the set-up procedure, aseptic technique and “venipuncture” on a banana or stuffed glove. Time drip rates commonly used in pregnancy and labor.

41. Obtain a copy of the midwifery license law and rules & regs for midwifery practice in your state. What are the legal requirements and limitations of the midwifery license regarding the use of medications and IV administration in your state?

How does this compare with the national certification, NARM CPM?

42. Complete the attached Practice Guidelines worksheets. These worksheets will serve as the basis for your professional Clinical Practice Guidelines you will draft before graduation. Fill them out as if you are a midwife in primary practice, and fill them out in the way *you* plan/want to practice. For additional guidance on Practice Guidelines, see the Practice Guidelines page on the NMI Student Portal.

43. Make yourself a chart, cheat sheet, index cards, or some other quick reference for all the drugs you may carry with you in your jurisdiction. Include drug and brand name, dosage, administration, common side effects, any particular considerations, and any other simultaneous needed actions. Consider carrying this with you and your medications always. Consider how you will regularly review and update this information, and how you will review it with any assistants, etc.

REMEMBER!

Take the [Pharmacology Quiz](#) when you have completed all the modules in this set.



Practice Guidelines Worksheet

Practice Guidelines form the blueprint for your rationale and procedures of your future midwifery practice. They should lay out your midwifery management plans for selected topics in enough detail that you can follow, share, and turn to them for guidance - but not too much detail as to be potentially incriminating if you don't follow them to the letter. Your submission here is a first draft, upon which we will provide feedback. You are expected to revise, reformat, and compile all your Practice Guidelines in your final submitted module at NMI: "Charting and Practice Guidelines". This macro Handbook of Practice Guidelines is also required by NARM and many state licensing agencies.

ABO & Rh Blood Typing and Management

Drafted by: [your name]

Date:

Date of Next Review: [typically in 3-5 years]

Background

Here you write a quick summary that introduces the topic, why you care about it as a midwife, and includes any pertinent definitions that may need to be cited for terms used in your guideline. This is typically 1-2 paragraphs.

Screening for ABO & Rh factor

Here you write how you, as a midwife, will screen for ABO Blood Types and Rh factor. Be sure to reference screening clients and partners, especially in respect the Rh negative blood types. If applicable in your area, reference fetal Rh typing.

Midwifery Management of Rh Negative Clients

Here you write step by step what you will do when you identify clients with Rh negative blood. How and when will you offer Rhogam? What does your informed choice look like? When might you revisit the conversation? Postpartum, will you screen the newborn? How?

Consult & Transfer of Care

Here you write under what conditions you would seek urgent or non-urgent consult or transfer of care with a physician. Be sure to reference relevant midwifery law (if relevant in your area) and write specific procedure for how to facilitate this consult/transfer-of-care.



Practice Guidelines Worksheet

Practice Guidelines form the blueprint for your rationale and procedures of your future midwifery practice. They should lay out your midwifery management plans for selected topics in enough detail that you can follow, share, and turn to them for guidance - but not too much detail as to be potentially incriminating if you don't follow them to the letter. Your submission here is a first draft, upon which we will provide feedback. You are expected to revise, reformat, and compile all your Practice Guidelines in your final submitted module at NMI: "Charting and Practice Guidelines". This macro Handbook of Practice Guidelines is also required by NARM and many state licensing agencies.

Intravenous (IV) Fluids

Drafted by: *[your name]*

Date:

Date of Next Review: *[typically in 3-5 years]*

Background

Here you write a quick summary that introduces the topic, why you care about it as a midwife, and includes any pertinent definitions that may need to be cited for terms used in your guideline. This is typically 1-2 paragraphs.

IV Fluids used in Practice

Solutions you plan to carry and administer in professional practice (NaCl? Lactated Ringers? D5W?)

-
-

Indications for use of IV Fluids

Here you write how you, as a midwife, will identify the need for IV Fluids - what prompts their use?

-
-
-
-
-

Midwifery Management

Here you write step by step what you will do to place an IV safely as well as administer IV fluids safely.

Consult & Transfer of Care

Here you write under what conditions you would seek urgent or non-urgent consult or transfer of care with a physician. Be sure to reference relevant midwifery law (if relevant in your area) and write specific procedure for how to facilitate this consult/transfer-of-care.



Practice Guidelines Worksheet

Practice Guidelines form the blueprint for your rationale and procedures of your future midwifery practice. They should lay out your midwifery management plans for selected topics in enough detail that you can follow, share, and turn to them for guidance - but not too much detail as to be potentially incriminating if you don't follow them to the letter. Your submission here is a first draft, upon which we will provide feedback. You are expected to revise, reformat, and compile all your Practice Guidelines in your final submitted module at NMI: "Charting and Practice Guidelines". This macro Handbook of Practice Guidelines is also required by NARM and many state licensing agencies.

Medication Use

Drafted by: *[your name]*

Date:

Date of Next Review: *[typically in 3-5 years]*

Background

Here you write a quick summary that introduces the topic, why you care about it as a midwife, and includes any pertinent definitions that may need to be cited for terms used in your guideline. This is typically 1-2 paragraphs.

Medications stocked for Practice

List all the medications you will carry in midwifery practice. Consider cross-referencing what you are permitted to carry in your state, if applicable. Next to each medication - indicate what it will be used for. Be sure to include medications for clients & newborns.

-
-
-
-
-

Stocking & Handling

Here you write how you will stock medications (overall parameters for minimum stock? medication shortages?), and how medications are handled (are meds ever sent home with clients? Are they stored in refrigerator?)

Documenting Medication Administration

Here you write how you document medications given to clients & newborns.

Allergic Reactions

Here you write step by step what you will do if a client has an allergic reaction to a medication, including how you check for contraindications and allergic reactions before administering the medication, midwifery management of

allergic reactions, and how you would seek urgent or non-urgent consult or transfer of care with a physician (and/or transport to hospital).