

Objective 1: Distinguish the current and expanding patient care roles of pharmacists in institutional practice.

Competency 1b: Analyze a patient's medication list.

Task: For any given patient medication list, explain generic and trade name, common indications, mechanism of action, dosing information (i.e., usual: dosing range, starting dose and any method of titration, dose frequency, parameters affecting dose and how the dose should be adjusted), parameters to monitor for efficacy (name of parameter, target for parameter, and frequency of measurement), parameters to monitor for common adverse reactions (name of parameter, adverse event it would detect, frequency of measurement), and clinically important drug interactions for each listed medication.

Competency Measure: Relate correctly in written form (organized and legible) the information listed in the task for at least two different patients. You can see the content of your report will depend on the patients and their drug lists. However, you must cover the topics as listed above. Your written report of these 2 patients' medication lists must accompany this syllabus when you submit it to the Office of Professional Pharmacy Education.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC II.A: Gather and organize all appropriate patient or drug-related information that will generate a new or revised care plan.

Describe how you chose to organize the information presented. Comment on how you might organize a standard form or format for yourself to record similar data for patients you see on a regular basis in your APPEs. Do you think the format you used here would work for that?

1b. Preceptor Assessment of Student (sign only one):

Meets Expectations. The student accomplished the test as stated and is an "advanced beginner" in this skill when compared to a newly graduated pharmacist.

Print Name, Sign, & Date

Exceeds Expectations. The student accomplished the test more thoroughly than stated and is "competent" in this skill when compared to a newly graduated pharmacist.

Print Name, Sign, & Date

Site Name and Location (Use stamp if available):

Objective 1: Distinguish the current and expanding patient care roles of pharmacists in institutional practice.

Competency 1c. Summarize how medication-related information is obtained from patients on admission.

Task: Determine how medications used prior to admission are identified and recorded (e.g., medication reconciliation) for individual patients. This can be done through interview/observation or direct participation. Who has this responsibility? If possible, interview a patient or caregiver upon admission to get an accurate and thorough drug list and document this information following proper procedures for the practice site. If you cannot perform the interview, arrange to observe one if possible. Recognize where pharmacists interact directly with patients, caregivers, or other health care professionals for the purpose of getting an accurate and thorough medication history.

Competency Measure: Distinguish in written form below (1–2 paragraphs) how medication reconciliation occurs upon admission. Be sure to explain activities performed by pharmacists versus other health care professionals in this process. You can see the content of your report will depend on what pharmacists do in their various roles specific to your site. Be sure to comment on how this information affects the patient’s care or treatment plan in the inpatient setting.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC II.A: Gather and organize all appropriate patient or drug-related information that will generate a new or revised care plan.

1c. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 1: Distinguish the current and expanding patient care roles of pharmacists in institutional practice.

Competency 1d: Explain how medication-related information is given to patients during hospitalization and upon discharge.

Task: Determine how medication-related information is delivered to individual patients and caregivers during hospitalization and upon discharge, and how important information about medication changes are communicated to the patients' primary care providers and community pharmacies. Who has this responsibility? If possible, observe or participate in medication counseling and education for a patient being discharged. Recognize where pharmacists interact directly with patients, caregivers, or other health care professionals for the purpose of medication education and counseling upon discharge.

Competency Measure: Detail in written form below (1–2 paragraphs) the information listed in the task and assess the extent of pharmacy involvement in this process. Describe any modifications that could occur in the system to optimize pharmacist involvement in delivering medication-related information to patients and caregivers and communication of medication changes to the patient's community pharmacy. If you were able to observe or perform discharge counseling, please comment on whether you think the patient understood and will he/she be able take the medications as instructed at home.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC III: Communicate and collaborate with patients, caregivers, health care providers, and others to improve patient care.

1d. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 2: Provide appropriate information about medications.

Competency 2a: *Identify drug information and other information resources available to pharmacy personnel at the site.*

Task: Through interview or observation, determine resources pharmacists use to look up needed information for direct patient care or to answer requests from other health care providers. The student should spend time using these resources to see how they apply to pharmacy practice activities at the site. To do this, a preceptor could have the student look up something he recently had to use drug information resources to find. Once the student looks it up, compare notes on what resources each used to locate the needed information. How did each find the answer? Did each come to the same answer? How could the student have searched more efficiently or accurately?

Competency Measure: Summarize in written form the drug, medical, and other patient care-related resources available to pharmacy personnel at the site.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC IV.C: Select resources that will accurately and efficiently find drug and health information.

List all of the drug information resources available to pharmacists at your practice site. Rank them from most applicable to practice and ease of use to least applicable to practice and difficult to use.

2a. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 2: Provide appropriate information about medications.

Competency 2b: *Accurately respond to a drug information request from a patient or health care colleague using language appropriate to the person requesting the information.*

Task: Answer a drug information question that can be answered using tertiary drug information resources and another question that requires examination of one or more pieces of primary literature.

Competency Measure: Generate a written answer as outlined in the task above. In the document, identify the question and list the resources used to answer the question, using the National Library of Medicine reference format.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC IV.A: *Provide relevant health information appropriately targeted to patients and their families, caregivers, health care providers, and others.*

Comments:

2b. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Drug Information Response Worksheet #2

Date: _____

Method Received: ___ Phone ___ In-person ___ Written ___ Email ___ Other

Requestor's Name: _____ Phone #: _____

Practice Site: _____

Requestor's Contact Info: _____

Requestor Type: ___ MD ___ RPh/PharmD ___ Nurse ___ Patient ___ Other

Type of Request:

___ Adverse drug reaction	___ Drug of choice/therapeutics	___ Pharmacokinetics
___ Alternative agents	___ General information	___ Pharmacoeconomics
___ Availability	___ Identification/foreign drug	___ Pregnancy & lactation
___ Dosing & administration	___ Investigational/orphan drug	___ Toxicology
___ Drug interactions	___ Pharmaceutics (stability, etc)	___ Other

Patient Data Needed to Answer Question:

Response:

References Used:

Method Returned: ___ Phone ___ In-person ___ Written ___ Email ___ Other

Time it took to research and answer question: _____

(Be specific to within 5 minutes of the actual time needed to clarify, lookup, formulate, and deliver the response).

Objective 3: Identify correct procedures for product distribution in an institution.

Competency 3a: Describe the steps in processing new medication orders at the site.

Task: Upon receipt of a new medication order, perform the steps to fill it including choice of the correct product, generation of appropriate labeling, and placement of the correct amount of medication in the container that the nurse or patient will use. Through interview, observation, or demonstration the student should also determine how an order for a non-formulary drug is processed. How would someone look up what drugs are on the formulary at the institution? Preceptors and students should discuss with students how formulary decisions are made. If possible, have the student attend a P & T committee meeting.

Competency Measure: Upon receipt of a written or computerized medication order, the student will either describe or perform in a correct order the steps used at the site to process the order.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABOs upon graduation:

ABO V.B: Review and interpret medical product orders for patients.

ABO PC V.C: Appropriately prepare and dispense medical products.

Describe how you would find out if a particular drug ordered is on formulary.

Describe how non-formulary requests are processed differently than formulary orders at the practice site.

Describe how formulary decisions are made...how does a drug make it onto formulary at this institution?

3a. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 3: Identify correct procedures for product distribution in an institution.

Competency 3b: *Prepare in advance prescribed routine medications for individual patients.*

Task: Fill medication cassettes (or any other medication distribution system used, such as an automated dispensing machine) with indicated daily medications for patients.

Competency Measure: The student must accurately fill cassettes or any other device for dispensing daily medications to inpatients of one floor or unit independently, and accurately describe how the process of charging patients for inpatient medications works.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC V.C: *Appropriately prepare and dispense medical products.*

How confident are you at performing this skill? How long did it take you to reach this level of confidence at preparing and dispensing medications in the inpatient setting?

3b. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 3: Identify correct procedures for product distribution in an institution.

Competency 3c: *Distinguish the process for supplying floor stock to patient care units.*

Task: Process floor stock medications, including controlled substance floor stock, if this task performed by pharmacy personnel at the site.

Competency Measure: The student must accurately fill and deliver floor stock, using whatever process is used in their institutional setting. The student must also accurately fill or describe the process of filling a controlled substance floor stock order.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC V.C: Appropriately prepare and dispense medical products.

Does your facility use any technology (automatic fill machines, Pixis, etc.) to fill floor stock? If so, what and how is it used? Who maintains this equipment?

Describe the process for filling a CII controlled substance order for floor stock in your facility.

3c. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 3: Identify correct procedures for product distribution in an institution.

Competency 3d: *Accurately prepare sterile products using proper aseptic technique in a timely manner.*

Task: Parenteral fluid preparations must be compounded within the hood using correct aseptic technique.

Competency Measure: The student independently, efficiently, and accurately should compound one syringe product, one small- or large-volume bag parenteral product (i.e., product 50-1000 ml that contains at least one drug or electrolyte addition), and one hyperalimentation product (unless the site does not compound hyperalimentation products).

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC V.C: Appropriately prepare and dispense medical products.

Does the practice site have a clean room in compliance with USP Chapter 797 requirements? If so, briefly describe the operations in the clean room (who and how many people work in there at a time, what precautions they must take when entering the room, what do pharmacists versus technicians do there, etc.). If not, briefly describe at least one thing the site would have to do to become compliant.

5c. Preceptor Assessment of Student (sign only one):

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Print Name, Sign, & Date

Site Name and Location (Use stamp if available):

Objective 3: Communicate appropriate information about medications.

Competency 3e: *Confirm accuracy of product preparation by other pharmacy personnel.*

Task: Confirm that the product preparer has selected the correct medication and dose, that the product used is not expired, and that the product has been properly labeled.

Competency Measure: The student should check both oral and IV medications within the same amount of time as a staff pharmacist or trained pharmacy technician and be able to articulate to the testing pharmacist exactly what was checked.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC V: Prepare and distribute medical products prescribed as part of the patient's care plan.

Describe an instance of when you or the pharmacist found an error or omission in the technician's work of preparing an order. How was it handled?

3e. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 4: Accurately and in a timely manner perform calculations used in institutional pharmacy practice.

Competency 4a: *Demonstrate accuracy and timeliness in the mathematical computation of ingredient amounts, doses, infusion rates, or other relevant calculations.*

Task: The student should be able to calculate doses for any given drug product. Dose calculations can include but are not limited to drug amounts for both individual doses and total quantity of dispensed product, conversion between dosage forms, infusion rates, dosing frequency, and adjustment for decreased renal function.

Competency Measure: The student should calculate quickly and accurately all doses, ingredient amounts, infusion rates, dosing frequency or dosing adjustment for special populations (e.g., pediatric, geriatric, decreased kidney or liver function, abnormal or altered pharmacokinetic parameters) for at least two different patient scenarios.

Products:

Calculation 1:

Calculation 2:

Comments:

4a. Preceptor Assessment of Student (sign only one):

Meets Expectations. The student accomplished the test as stated and is an “advanced beginner” in this skill when compared to a newly graduated pharmacist.

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Exceeds Expectations. The student accomplished the test more thoroughly than stated and is “competent” in this skill when compared to a newly graduated pharmacist.

Print Name, Sign, & Date

Site Name and Location (Use stamp if available):

Objective 4: Accurately and in a timely manner perform calculations used in institutional pharmacy practice.

Competency 4b: Accurately perform calculations needed to determine ingredient amounts for an uncomplicated patient requiring total parenteral nutrition.

Task: Perform all ingredient amount calculations for a patient placed on a new TPN using standard TPN ingredient dosing guidelines.

Competency Measure: Student can perform all calculations correctly for a new TPN patient within 20 minutes.

4b. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

TPN Worksheet

Age: _____ Sex: _____

Height: _____ cm

ABW: _____ kg

IBW: _____ kg

Feed Weight: _____ kg

Targets:

1. Daily fluid needs.

>20 kg: 1500ml + (20 ml)(W – 20 kg), or 30 – 35 ml/kg/day

Calculated target: _____ ml/day

2. Protein requirements.

Normal, unstressed individual: 0.8g/kg/day

Hospitalized patient: 1–1.2g/kg/day _____

Stressed patient: 1.5–2g/kg/day _____

Calculated target: _____ g protein/day

3. Non-protein calories

$BEE_{men} = 66.67 + 13.75(W) + 5.0(H) - 6.76(A)$

$BEE_{women} = 665.1 + 9.56(W) + 1.86(H) - 4.68(A)$

activity factors: confined to bed: 1.2, out of bed: 1.3

stress factors: surgery: 1.2; infection: 1.4; trauma: 1.5; burns: 1.7

TDE = (BEE) (activity factor) (stress factor)

Calculated target: _____ kcals/day

Amounts:

4. Total TPN volume _____ ml

5. Protein Volume

10% AA calculated volume: _____ ml

6. Dextrose volume (3.4 kcals/g)

D70W calculated volume: _____ ml

3.5 mg/kg/min = _____ g/day

7. Fat volume (9 kcals/g; 2 kcals/mL)

20% lipid calculated volume: _____ ml plus sterile water volume: _____ ml

Electrolytes:

8. Daily electrolyte needs total # of kcals/day from fat and dextrose: _____ (% fat)

	$\frac{amt/1000 \text{ calories}}{}$	$\frac{(amt)[(\# \text{ daily kcals})/1000]}{}$	$\frac{amount/bag}{}$
sodium	40–50 mEq	_____	_____
potassium	40 mEq	_____	_____
magnesium	8–12 mEq	_____	_____
calcium	2–5 mEq	_____	_____
phosphate	15–25 mMol	_____	_____

9. Calculate the volume of each electrolyte solution that you will add

	Volume to add
sodium chloride 23.4% (4mEq/ml)	_____ ml
sodium acetate 16.4% (2mEq/ml)	_____ ml
potassium phosphate: 3mMol phosphate/ml, 4.4 mEq potassium/ml	_____ ml
potassium chloride 2mEq/ml	_____ ml
magnesium sulfate 4mEq/ml	_____ ml
calcium gluconate 10% (0.465mEq/ml)	_____ ml
vitamins + trace elements	20.0 ml
Total	_____ ml

Infusion Rate: _____ ml/hr

Objective 5: Explain quality measurement or improvement activities.

Competency 5a: *Identify quality assessment activities in progress or recently completed at the site.*

Task: Through interview and observation, determine quality assessment or improvement activities in process or recently completed at that site.

Competency Measure: Summarize in written form below (1–2 paragraphs) the quality assessment or management activities performed by pharmacists at the site.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO SM VI.A. Participate in the organization’s system for defining, implementing, and improving quality systems that govern the prescription, selection, preparation, processing, distribution, and administration of medical products.

5a. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

Objective 5: Explain quality measurement or improvement activities.

Competency 5b: *Design a quality measurement project that could be of value to pharmacy management in an institutional setting.*

Task: Through interview and observation, determine a quality assessment or improvement activity that might benefit the site. Design the methods for implementation of the activity.

Competency Measure: In written form, identify the background for the project, including justifying project need and potential benefit in the introduction, and then describe in detail the methods to use to implement the project. This written document should be prepared as a research or business proposal and included with this syllabus material when turned in for final credit.

Remember, novice students must complete the design phase in written form. Advanced beginner students (those already experienced in inpatient pharmacy who quickly accomplish the other competencies) should implement the project and then write a research summary of how it went. Such a written report should include, in addition to the required elements listed above, results of the project and evaluate both benefits and pitfalls discovered during implementation.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO SM VII. Apply principles of outcomes research and continuous quality improvement methods to the evaluation of pharmacy and health care services

Comments:

Materials generated for this outcome may be shared with the site or preceptor, but at a minimum they must be turned in with the final syllabus portfolio for final credit. It will be reviewed by the School directly.

Objective 6: Display professional behavior and a willingness to problem-solve.

Competency 6a: *Be prompt, and appear neat and cheerful, display a positive attitude, adjust adequately to new or unexpected situations, and display a willingness to work in a collegial fashion with pharmacists, technicians, and other health care practitioners.*

Task: As noted above in the competency, the preceptor must define at the beginning of the student's experience what attire is expected, how to meet/greet patients and pharmacy and health care personnel, when and how to ask for help, and what process to follow if the student desires to provide feedback to the preceptor on a specific situation. The student and preceptor will set a schedule and the student should appear at the pharmacy at the agreed-upon days and times. The student should strive to maintain a pleasant positive manner even when circumstances are outside of the student's experience or comfort.

Because the process of developing competency in technical tasks often involves instruction from non-pharmacist individuals, the student should value the information provided by technicians and other health care professionals. Under no circumstances should the student express condescension or other non-collegial attitudes toward individuals with whom they interact.

Students are encouraged to discuss with preceptors their responses to unexpected situations.

Competency Measure: The preceptor or co-workers should not document more than 1–2 instances where behavior is not professional. Any noted behavior problems should be discussed in a non-confrontational manner with the student. The student should show evidence of acknowledging the problem and working to correct it or prevent future occurrences.

Reflect on this...

This competency is intended to prepare you for demonstrating the following ABO upon graduation:

ABO PC I. Establish professional relationships with patients, caregivers, prescribers, and other members of the interprofessional health care team.

Describe one unexpected situation where you had to display professional behavior and a willingness to problem-solve.

6a. Preceptor Assessment of Student (sign only one):

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Site Name and Location (Use stamp if available):

