

# Laboratory Exercises in Pharmacy Practice

Gary C. Van Riper  
Joye Ann Billow

## *INTRODUCTION*

The course entitled Prescription Practice (PHA 412), which is taught in the second semester of the third professional year (1-4 curriculum), is focused on the provision of pharmaceutical services in the community setting. One goal of the course is to introduce the student to using a computer, with appropriate pharmaceutical software (NARD Scripwriter®), for processing prescriptions, pricing, and maintaining patient profiles. The laboratory exercises described below were designed to aid the student in preparation for practicing in the community setting.

## *THE COURSE*

1. *Introduction to the Pharmacy Computer System.* (1 laboratory period) Each student receives a handout that briefly describes how to use the system. A screen projection device is used to demonstrate the system to approximately 15 to 20 students at a time. The students are encouraged to become familiar with the system by processing prescriptions for themselves or fictitious patients.

---

Gary C. Van Riper, M.S., is Assistant Professor of Pharmaceutical Sciences and Joye Ann Billow, Ph.D., is Professor of Pharmaceutical Sciences at the South Dakota State University College of Pharmacy, Brookings, SD 57007.

Journal of Pharmacy Teaching, Vol. 4(1) 1993  
© 1993 by The Haworth Press, Inc. All rights reserved.

2. *Introduction to the Prescription and the Dispensing Label.* (1 laboratory period) Examples of typical prescriptions are presented using an overhead projector (Figures 1 and 2). The students are asked to provide a literal translation of the directions (e.g., "1 b.i.d." is "one two times a day"). The discussion focuses on expanding the directions to maximize the potential for a positive patient outcome. For example, a verb is selected that clearly specifies the intended route of administration, the dosage form is identified, the quantity of medication per dose is defined, and the times of the day the medication is to be used are specified. Thus, "1 b.i.d." may become "Take one capsule by mouth every 12 hours each day until all of the medication has been taken." Additional considerations include actively involving the patient in his or her therapy, such as adjusting the dosage schedule to conform to the patient's lifestyle (e.g., take at 8 AM and 8 PM).

Examples of commonly encountered prescription labels are presented to the students for interpretation and critique. Discussion involves not only completeness and correctness of the labels in a technical sense but also how the directions could be expanded or improved. Recognition of the physical size and computer system limitations of most labels leads to consideration of alternate or adjunct means of conveying information to the patient. Examples include computer-generated patient leaflets, medication calendars for drugs such as corticosteroids and warfarin, commercially prepared information sources such as the USP Patient Information Leaflets (PIL), and adjuncts such as oral syringes, calibrated droppers, dosage measuring cups, etc.

3. *Introduction to the Process of Profile Review.* (2 laboratory periods) The first hour of the laboratory is used to introduce the student to the process of reviewing patient profiles using the concepts presented in the *Systematic Medication Profile Review* (3rd edition) by Srnka and Self. During the second hour, sample profiles are presented, and the students, working in small groups, are asked to identify problems and possible solutions to the identified problems. The *Therapeutic Drug Utilization Review* module developed at the Philadelphia College of Pharmacy and Science is also presented and discussed as another model for the profile review process.

FIGURE 1

<b>BROOKVILLE CLINIC, PA</b>	
100 22nd Avenue N. Brookings, SD 57006-0101 605 - 692 - 0001	
<b>Juanita Jones</b>	
<i>Adams, M.L., M.D.</i>	Name _____
<i>Hofer, R.K., M.D.</i>	Address <u>316 Blanco</u> Date _____
<i>Klein, L.W., M.D.</i>	
<i>Kruse, J.P., M.D.</i>	<b>Rx</b>
<i>Lower, L.B., M.D.</i>	<b>Cipro 500 mg</b>
<i>Maher, H.A., D.O.</i>	<b>#15</b>
* * *	
<i>Johnson, C.R., P.A.</i>	<b>1 bid</b>
<i>Nelson, A.M., C.N.P.</i>	
<i>Peters, K.L., P.A.</i>	
<i>Smith, H.L., R.D.</i>	<b>RK Hofer</b>
<i>Wilson, W.O., E.T.</i>	_____
	Substitution Permitted <input type="checkbox"/> Dispense as Written <input type="checkbox"/>
	Refill: _____
	Label: <input checked="" type="checkbox"/> DEA Number: _____

37 /

FIGURE 2

## The Brookville Pharmacy

One Placebo Lane      Brookville, SD 57007

605 - 688 - 1111

R<sub>x</sub> 573-491      Dr. Hofer

Juanita Jones

4/7/92

Take one tablet twice daily.

Cipro 500mg

gvr

4. *Initial Profile Assignment.* Each student receives background information on a fictitious patient for entry into the pharmacy computer system (Figure 3). The student is also given a prescription or prescriptions for the patient. The student must make a number of decisions regarding the prescription and the therapeutic intent. The items to be examined are:

- a. Content of the prescription (e.g., patient's name and address, drug name, strength, signature, refills, etc.).
- b. Appropriateness of therapy with regard to previous and current prescription and over-the-counter medications, diagnoses, allergies, etc.
- c. If problems are identified, the student must decide what action would be appropriate. If, in an actual practice setting, the prescriber would have to be contacted, the student must determine the most appropriate solution or solutions and alternatives that might be presented to the prescriber.

FIGURE 3

PATIENT: Juanita Jones  
ADDRESS: 316 Blanco  
          Brookings, SD 57006  
TELEPHONE: 677-8900  
BIRTH: 9/15/75  
RACE: Caucasian  
SEX: Female  
OCCUPATION: Student  
DIAGNOSES: Urinary Tract Infection  
ALLERGIES: Sulfonamides  
HT: 5'2"  
WT: 125 lbs  
PHYSICIAN: Hofer  
OTC MEDS: Chlortrimeton 4 mg, Afrin Nasal Spray  
COMMENTS: Eager for information about medications

### 5. Evaluation.

- a. The student must prepare a written report for each prescription or refill. The report must be typed or prepared on a word processor. The content of each report is as follows:
  1. Name of the medication.
  2. Classification of each problem according to the categories identified by Smka and Self.
  3. Brief description of the actions taken by the student to solve identified problems and a justification for those actions.
  4. Copy of the computer-generated dispensing label and any auxiliary labels if dispensing the prescription or refill would be appropriate.

Each report is turned in to the instructor on Friday of each week. The graded report is returned on the following Monday so the student has feedback before receiving the next prescription or refill task. Each student receives the same number of prescriptions/refills during the semester, but not everyone receives a new assignment each week.

- b. At scheduled times during the semester, each student is interviewed by one of the instructors regarding the status of the student's patient. The student is asked to present the patient's background, review the prescriptions received by the patient, comment on any changes that were made in the drug regimen, and give an overall assessment of the quality of pharmaceutical care for that patient. These one-on-one interviews vary in length, depending on the complexity of the drug therapy and the student's ability to respond to questions. The average time is approximately 10 minutes.
- c. The computer exercises were graded using the following point system:

Prescriptions/Refills . . . . . 100<sup>1</sup>  
Interviews . . . 2 @ 25 . . . . . 50

The 150 points for the computer exercises represent approximately one-third of the laboratory grade. In view of the extent

to which computers are used today in retail practice, the authors intend to expand this portion of the laboratory and give it more weight in the grading process for the course.

**6. Student Evaluation of the Described Exercises.** The students in the course are asked to complete a teacher evaluation survey at the end of the course. There were many positive comments about the described exercises. In particular, those students with little or no community practice experience appreciated the introduction to a community practice model.

### NOTE

1. This figure includes 10 points per prescription write-up, with the total adjusted to 100 points. The students were given an average of six prescriptions in a period of eight weeks.

*for faculty/professionals with journal subscription recommendation authority for their institutional library . . .*

If you have read a reprint or photocopy of this article, would you like to make sure that your library also subscribes to this journal? If you have the authority to recommend subscriptions to your library, we will send you a free sample copy for review with your librarian. Just fill out the form below—and **make sure that you type or write out clearly both the name of the journal and your own name and address.**



( ) Yes, please send me a complimentary sample copy of this journal:

\_\_\_\_\_ (please write in complete journal title here — do not leave blank)

I will show this journal to our institutional or agency library for a possible subscription.

The name of my institutional/agency library is:

NAME: \_\_\_\_\_

INSTITUTION: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

Return to: Sample Copy Department, The Haworth Press, Inc.,  
10 Alice Street, Binghamton, NY 13904-1580