

## **Pharmacy Morning Report Pilot Study: Adapting the Medical Model of Case-based Teaching to the Pharmacy Curriculum**

Angela R. Thomason, PharmD, Assistant Professor of Pharmacy Practice, Department of Pharmacy Practice, McWhorter School of Pharmacy, Samford University, Birmingham, AL 35229

Bruce A. Waldrop, RPh, PhD, Assistant Professor of Pharmacology, Department of Pharmaceutical, Social, and Administrative Sciences, McWhorter School of Pharmacy, Samford University, Birmingham, AL 35229

Robert P. Henderson, PharmD, FASHP, FCCP, BCPS, Professor of Pharmacy Practice, Vice Chair Pharmacy Practice Department, McWhorter School of Pharmacy, Samford University Birmingham, AL 35229

Presented as a poster at the American Association of Colleges of Pharmacy Annual Meeting, San Diego, July 9, 2006.

### **Abstract**

**Objective:** Develop and evaluate a curriculum-spanning, problem-based learning activity which will integrate and strengthen basic and clinical pharmacy sciences knowledge by utilizing a patient-centered, progressive disclosure case study.

**Methods:** One-hour discussion sessions were conducted over a 3-month period for first- (P1), second- (P2), and third-year (P3) pharmacy students. All sessions were led by 2 fourth-year (P4) students and attended by clinical and basic sciences faculty. The presentation of the patient cases were modeled after the medical morning report, in which pertinent information was progressively disclosed by presenters in response to the audience and facilitators' questions. After discussion of recommendations and pharmacotherapeutic treatment plans, the P4 students concluded with a summary of the patients' outcomes. A survey was administered to the P1, P2, and P3 students to determine the effectiveness of the learning activity.

**Results:** Seventy-five percent (n=43) of the participants (n=57) completed the survey. All students either Strongly Agreed or Agreed that the PMR (Pharmacy Morning Report) activity was a positive learning experience and most students either Strongly Agreed or Agreed that the activity helped them apply basic and clinical pharmacy sciences knowledge in a patient case scenario.

**Conclusions:** Adapting the medical model of morning report for use in a professional pharmacy curriculum allows for curriculum-wide integration of basic and clinical sciences in a problem-based learning environment. The success of this pilot program warrants further evaluation and possible integration into the pharmacy curriculum.

**Keywords:** pharmacy morning report, case discussion

## Introduction

The pharmacy curriculum at the McWhorter School of Pharmacy is a four-year Doctor of Pharmacy program in which the pharmaceutical and biological sciences are primarily covered during the first 2 years of the curriculum. During the third year, students learn to apply their basic sciences knowledge to medication therapy management and other practice-specific courses. The final year of the program involves a minimum of 8 four-week advanced practice experiential courses, which students continue to develop and apply their knowledge and skill sets in various pharmacy practice settings.

Like many other schools and colleges of pharmacy that employ this curricular design, stratification and possible isolation of courses may occur. This may somewhat hamper students from making connections not only among courses within the same academic year (horizontal integration), but also the interdependence of courses throughout the curriculum (vertical integration). Additionally, because of the compartmentalization of courses, faculty members may not be fully aware of the depth or breadth of content in other courses.

Newly adopted Accreditation Council for Pharmacy Education (ACPE) accreditation standards<sup>1</sup> not only stress the importance of content integration within the pharmacy curriculum, but also the utilization of active- and problem-based learning, preferably within the context of case studies and group discussions. Additionally, the new standards state that students should be actively involved in the education of their peers. In addition to the accreditation standards, the CAPE Educational Outcomes (Center for the Advancement of Pharmaceutical Education)<sup>2</sup> documents the obligation for schools to develop programs encompassing a team-based approach to pharmaceutical care.

The authors sought to incorporate these guidelines and outcomes and address our curricular issues by developing a curriculum-spanning, problem-based learning activity which would integrate and strengthen basic and clinical pharmacy sciences knowledge by utilizing a patient-centered, progressive disclosure case study approach.

The learning activity was modeled after the medical morning report, which is at least one hundred years-old, developed by physicians for the purpose of educating medical residents, interns and students.<sup>3-6</sup> Typically, a medical resident or student will present a recently encountered patient case to the audience, which includes physicians, residents, interns, and students. Details of the case are disclosed in a progressive manner by the presenter. At each stage of information disclosure, the residents, interns, and students in the audience attempt to place themselves at the scene and are questioned as to their thoughts on all aspects of the case including pathophysiology, interventions, and pharmacotherapy regimens necessary to treat the patient.<sup>3,4</sup> During a morning report, both vertical and horizontal integration of didactic and practical coursework spanning the medical curriculum are applied and reinforced including knowledge of the basic biomedical sciences, such as physiology, pathophysiology, anatomy, and practice skills.

Our development of a Pharmacy Morning Report (PMR) model is based on the basic premises of medical morning report as described above, but emphasizes the pharmaceutical sciences such as physiology, pharmacology, pharmacokinetics, and pharmaceutics, and how each of these relate to clinical pharmacy sciences, such as pharmacotherapy. By using a patient-centered, progressive disclosure approach, students can further develop clinical competency and their ability to understand the clinical reasoning necessary to provide pharmaceutical care within the realm of evidence-based medicine.

## Methodology

The PMR was design to integrate students' knowledge of didactic learning and the development of critical thinking skills. PMR incorporates Bloom's Taxonomy of Learning<sup>7</sup> abilities (knowledge,

Published in:

*The International Journal of Pharmacy  
Education and Practice*  
Vol 4, Issue 2, Fall 2008

comprehension, application, analysis, synthesis, and evaluation). In addition, Fink's taxonomy of Significant Learning<sup>8</sup> (foundational knowledge, application, and integration) is addressed with the learning objectives of PMR. The learning objectives for the curricular innovation are outline in Box 1.

#### **Box 1: Student Learning Objectives**

- ▶ Apply basic and clinical sciences' knowledge to a patient case scenario
- ▶ Develop critical thinking skills
- ▶ Develop peer teaching skills
- ▶ Develop case presentation skills (P4 students only)

The pilot study was conducted at McWhorter School of Pharmacy at Samford University over the span of one semester. The audience was defined as a cohort of student volunteers from the school of pharmacy. One hour discussion sessions twice a month were recommended for first- (P1), second- (P2), and third-year (P3) pharmacy students. Students were allowed to attend more than one session. Notification of upcoming PMR sessions was done by school-wide e-mail approximately 4 days prior to each session. Sign-up sheets were posted in a hallway accessible to all students, with a restricted number of sign-up spaces based on student academic year (P1: 6; P2: 9; P3: 10). Each session was led by 2 fourth-year (P4) pharmacy students enrolled in an advanced practice experiential course. P4 students were required to present an actual patient case from their experiences. All sessions were attended by faculty with content expertise from the basic science and practice departments. One faculty member served as the PMR facilitator. Refreshments were provided during the sessions. The Samford University Institutional Review Board reviewed and approved this study.

#### ***Procedures***

The presentations were modeled after medical morning report, in which pertinent information was progressively disclosed in response to questions. The case was unknown to the faculty and student audience. After disclosure of information by the presenter (P4), pertinent patient case information was scribed on a blackboard by a P4 student. The P4 students presented the patient's chief complaint and history of present illness. To begin the discussion the facilitator asked general questions such as "What do you know about the patient?" The case unfolded based on information requested from the student audience under the guidance of the faculty facilitator. For example, students asked for past medical or social history when they realized that they needed more information to identify or resolve the patient's problem(s). However, if students did not ask for critical information needed to determine the diagnosis or treatment of the patient, then the facilitator or P4 student prompted the audience with a direct question. As the case progressed, students were required to develop a differential diagnosis and a pharmacotherapy treatment plan as prompted by the facilitator during the discussions. Faculty audience members would ask the P1, P2, and P3 students to explain and apply basic and clinical sciences' concepts relevant to the case. Questions were targeted to specific student groups (P1, P2, or P3) based on the content matter and knowledge expected at their level in the curriculum. For example, P1 students currently enrolled in biochemistry and physiology would be asked to describe the determinants of blood pressure when vital signs were presented. If incorrect responses or comments were voiced by the student audience then the facilitator would prompt the audience for additional discussion and feedback. For an example of a case and some suggested facilitator questions, see Appendix A. After discussion of recommendations and pharmacotherapeutic treatment plans, the P4 students concluded with a summary of the patient case outcomes for comparison. After the summary was disclosed, the facilitator and faculty audience outlined key points and corrected any misunderstandings presented during the PMR session.

Published in:

*The International Journal of Pharmacy  
Education and Practice*  
Vol 4, Issue 2, Fall 2008

## Discussion/Results

Five one-hour discussion sessions, each focusing on a different patient case encountered at a pharmacy practice site, were conducted over a 3-month period. The patient cases presented during the semester included topics such as infectious diseases, cardiology, neurology and toxicology.

For assessment of the PMR, an online survey (Appendix B) was made available to the participants at the end of the semester using the university-wide (Blackboard) course administration program. The survey could be taken from any computer with Internet access and was available at any time during a 9-day period. Two questions were used for student categorization purposes (current year, number of sessions attended). Nine questions utilized a Likert scale to assess the students' level of agreement with statements describing various aspects of PMR. Four of the survey questions were open-ended questions which allowed students to further elaborate on the PMR activity. One question determined if and how often the students recommended the PMR to their fellow classmates. The survey participants were anonymous.

A total of 57 P1 (n = 10), P2 (n = 20), and P3 (n = 27) students volunteered to participate in PMR. Seventy-five percent (n=43) of the participants completed the survey. Fifty-three percent of the survey respondents indicated they attended multiple PMR sessions. Ninety-seven percent of students stated that they looked forward to participating in PMR sessions. Of the 43 respondents, most students either frequently (44%) or occasionally (53%) recommended the PMR to their classmates. Overall, students rated their participation in the discussion sessions as average. However, students were surprisingly eager to participate in discussions and provide feedback to questions in the audience.

All students either Strongly Agreed or Agreed that the PMR activity was a positive learning experience and most students either Strongly Agreed or Agreed that the activity helped them apply basic and clinical pharmacy sciences knowledge in a patient case scenario (Table 1). Eighty-nine percent, 93%, and 100% of the P1, P2, and P3 students, respectively, either Strongly Agreed or Agreed that PMR helped them understand how to apply their basic science knowledge. In the application of clinical sciences, 44% of P1 students either Strongly Agreed or Agreed whereas 86% and 100% of the P2 and P3 students either Strongly Agreed or Agreed, respectively. Overall, 95% of students either Strongly Agreed or Agreed that PMR's progressive disclosure format prompted them to use their critical thinking skills (Table 1).

Ten basic and clinical science pharmacy faculty members attended a session of PMR during the semester. Attendance of faculty members from basic and clinical sciences departments allowed for application and reinforcement of content taught across the spectrum of disciplines. Overall, 95% of students either Strongly Agreed or Agreed that faculty involvement were beneficial (Table 1).

One hundred percent of the pharmacy students either Strongly Agreed or Agreed that PMR helped them understand how their current pharmacy studies were applicable to future courses regardless of current status in the doctor of pharmacy program (Table 1). In addition, 65% of all students either Strongly Agreed or Agreed that PMR should be incorporated into the current doctor of pharmacy curriculum (P1: 89%; P2: 29%; P3: 80%).

The overall experience of PMR was rated by the students as a positive experience (100% either Strongly Agreed or Agreed). One student stated "it brought all the classes that I have been taking together in a multidimensional case". However, in the area of applying clinical knowledge, only

Published in:

*The International Journal of Pharmacy*

*Education and Practice*

Vol 4, Issue 2, Fall 2008

**Table 1:** The Pharmacy Morning Report Survey Results

Question	Overall (n=43)	P1 (n=9)	P2 (n=14)	P3 (n=20)
<b>I feel that PMR helped me better understand how to apply basic sciences material to a patient case scenario.</b>	<sup>a</sup> 4.5 (0.59) <sup>b</sup> 95% SA/A	4.2 (0.67) 89% SA/A	4.4 (0.65) 93% SA/A	4.7 (0.47) 100% SA/A
<b>I feel that PMR allowed me to apply my clinical knowledge to solving problems in a patient case scenario.</b>	4.4 (0.76) 84% SA/A	3.8 (0.97) 44% SA/A	4.4 (0.74) 86% SA/A	4.8 (0.44) 100% SA/A
<b>I feel that the progressive disclosure format of PMR (releasing information when asked for) prompted me to use my critical thinking skills.</b>	4.5 (0.59) 95% SA/A	4.4 (0.73) 89% SA/A	4.4 (0.51) 100% SA/A	4.6 (0.60) 95% SA/A
<b>PMR helped me understand how my current pharmacy studies are applicable to future courses.</b>	4.7 (0.48) 100% SA/A	4.9 (0.33) 100% SA/A	4.6 (0.50) 100% SA/A	4.6 (0.51) 95% SA/A
<b>The involvement of basic sciences faculty and clinical faculty in PMR sessions was beneficial in helping me understand the material.</b>	4.4 (0.59) 95% SA/A	4.6 (0.73) 89% SA/A	4.5 (0.52) 100% SA/A	4.4 (0.59) 95% SA/A
<b>There was insufficient time allotted for the PMR sessions.</b>	2.9 (1.02) 28% SA/A	2.2 (0.97) 11% SA/A	3.1 (1.03) 28% SA/A	3.1 (0.94) 35% SA/A
<b>PMR should be incorporated into the pharmacy curriculum.</b>	3.9 (0.97) 65% SA/A	4.3 (0.71) 89% SA/A	3.2 (0.97) 29% SA/A	4.1 (0.85) 80% SA/A
<b>Overall, I feel that PMR was a positive learning experience.</b>	4.9 (0.35) 100% SA/A	5.0 (0) 100% SA/A	4.8 (0.43) 100% SA/A	4.9 (0.37) 100% SA/A

<sup>a</sup>Data expressed as mean (standard deviation) of the five-point Likert scale (1-Strongly Disagree to 5-Strongly Agree)

<sup>b</sup>Percent of students either Strongly Agree or Agree  
Abbreviations: SA, Strongly Agree; A, Agree

44% of P1 students Strongly Agreed or Agreed compared to 86% and 100% in the P2 and P3 classes, respectively. Given that P1 students in the fall semester have minimal exposure to clinical experience and information, these results are not surprising. Several comments from P1 students, such as “[PMR being] my first experience in clinical thinking, and [I] thoroughly enjoyed it” are consistent with this explanation. The PMR allows students from early on in the curriculum to become aware of the clinical application methods necessary in future segments of the curriculum. In addition, they observe the performance expectations of upper-level students. As the students progressed in the curriculum, PMR application was apparent based on the survey results and student participation.

Students submitted over 45 positive written comments about pharmacy morning report. The majority of the comments emphasized how the PMR unites together the importance of previous, current and future courses. Several students stated, “I enjoyed PMR sessions”, and “...helped me understand how to apply a lot of information that I have [previously] learned.” The only major constructive criticism acknowledged by students was the time frame of PMR (Table 1). Several students commented about the lack of sufficient time to cover all the details of the case.

Published in:

*The International Journal of Pharmacy  
Education and Practice*  
Vol 4, Issue 2, Fall 2008

## Limitations

This study had several limitations. Each session was approximately one hour in duration which was identified as an insufficient amount of time by some students. By increasing the duration of each PMR session, more time would be available for discussion of key concepts and allow students to better analyze and evaluate the case and their peers' comments to achieve the learning objectives (Box 1). In addition, the scale of the pilot program was relatively small (n=57). The majority of pharmacy schools enroll greater than 40 students per year in a 4-year program. A larger scale of PMR to incorporate more students per session may benefit schools of pharmacy in achieving the new ACPE accreditation standards with minimal curriculum revision. Although the survey results indicated that the PMR was a positive learning experience, our study did not assess whether the PMR actually led to an increase in students' content knowledge or problem-solving ability. As we continue to evaluate the PMR, we plan to incorporate a summative assessment at the conclusion of each PMR session.

## Conclusion

The 2007 ACPE accreditation standards outline new guidelines of integration of content with coordinated instruction across departments and faculty disciplines. The guidelines state that pharmacy programs must use and integrate teaching and learning methods that foster the development and maturation of critical thinking and problem-solving skills. By developing critical thinking skills, schools and colleges produce self-directed, life-long learners.

The progressive disclosure format of PMR fosters an active-learning environment in which students would discuss with their peers possible diagnoses, appropriate laboratory values, physiology, anatomy, and medication therapy. This model of learning addresses the development of life-long learning skills and several core curricular and learning guidelines in the newly adopted ACPE accreditation standards. Adapting the medical model of morning report for use in a professional pharmacy curriculum appears to allow for curriculum-wide integration of basic and clinical sciences in a problem-based learning environment. The success of this pilot program warrants further evaluation and possible integration into the pharmacy curriculum.

**References:**

1. Accreditation Council for Pharmacy Education. Accreditation standards and guidelines for the professional program in pharmacy leading to the doctor of pharmacy degree Web site. <http://www.acpe-accredit.org/deans/standards.asp>. Accessed February 2007.
2. American Association of Colleges of Pharmacy, Center for the Advancement of Pharmaceutical Education Web site. [http://www.aacp.org/Docs/MainNavigation/Resources/6075\\_CAPE2004.pdf](http://www.aacp.org/Docs/MainNavigation/Resources/6075_CAPE2004.pdf). Accessed May 7, 2008.
3. Durning SJ, Sweet JM, Cation LJ. Morning report: an analysis of curricular content and comparison to national guidelines. *Teach Learn Med* 2003;15:40-44.
4. Amin Z, Guajardo J, Wisniewski W, Bordage G, Tekian A, Niederman LG. Morning report: focus and methods over the past three decades. 2000. *Acad Med*;75:s1-s5.
5. Demopoulos B, Pelzman F, Wenderoth S. Ambulatory morning report: an underutilized educational modality. *Teach Learn Med* 2000;13:49-52.
6. Wenderoth S, Pelzman F, Demopoulos B. Ambulatory morning report. *J Gen Intern Med* 2002;17:207-209.
7. Bloom BS ed. *Taxonomy of Educational Objectives. The Classification of Education Goals. Handbook 1: Cognitive Domain*. New York, NY: McKay; 1956:62-197.
8. Fink Ld. *Creating Significant Learning Experiences. An Integrated Approach to Designing College Courses*. San Francisco, California: Jossey-Bass; 2003:73-81.

## Appendix A

### Example of Pharmacy Morning Report Case

**History of Present Illness:** A 31 year old AAM who presents to emergency department with a chief complaint of chest pain. Chest pain started at 10AM while he was at work. Pain is described as a “giant dull needle-ache from inside.” Pain is a 10/10 and radiating to his left arm and shoulder. Other symptoms include SOB, diaphoresis, palpitations, lightheadedness, and burning in throat, but no N/V. Patient reports pain increasing with inspiration, cough, and sitting up.

*Suggested Facilitator Questions:*

1. *What do you know to identify the problem?*
2. *Explain the pathophysiology related to the development of chest pain?*
3. *What additional information do you need to treat the patient?*
4. *What is problem? Why?*

### **Past Medical History**

Uncontrolled HTN “since childhood”

*Suggested Facilitator Questions:*

1. *What is HTN?*
2. *How does uncontrolled hypertension relate to the patient’s chief complaint?*
3. *Prolong uncontrolled HTN affects which organs?*
4. *What other information about the patient’s HTN is important?*

### **Social History**

Tobacco use (1-1.5 PPD since age 14)  
Alcohol 1-2 beers/day  
Employment: tile layer  
Married with 4 children

*Suggested Facilitator Questions:*

1. *What is important in relationship to the patient’s chief complaint?*
2. *How does smoking effect blood pressure and the heart?*

### **Family History**

DM  
HTN  
CVA

### **Home medications**

None for the last 4 years due to drug side effects  
Aspirin at onset of chest pain  
NKDA

### **Physical examination**

Vitals: 226/131 and 205/128mmHg 80 beats per minute 19 respiratory rate  
Height 6’4”, Weight 240 lbs

*Suggested Facilitator Questions:*

1. *Explain systolic and diastolic measurements?*
2. *What is the patient at risk for with the current blood pressure reading?*

Published in:

*The International Journal of Pharmacy  
Education and Practice  
Vol 4, Issue 2, Fall 2008*

3. How would you treat Mr. GM's blood pressure? Medication, dose, route?

### Continued Physical Examination

#### General

Afebrile  
W/DWN AAM in NAD

#### HEENT

PERRL, EOMI, Pupils clear

#### Cardiovascular

Supple neck (no JVD, TM, or lymphadenopathy)  
RRR, normal S1 and S2 sounds

#### Pulmonary

No W/R/C

#### Abdomen

Soft, NTND, (+)BS, no HSM

#### Extremities

2+ Doppler, no C/C/E

#### Skin

No rash

#### Neurology

A and O<sub>x3</sub>

#### Suggested Facilitator Questions:

1. Any abnormalities of significance?
2. What are S1 and S3 sounds in the CV examination? What are the abnormal sounds? What disease states are associated with the abnormal sounds?
3. Do you want to revise your diagnoses and/or treatment therapy? Why?

### Laboratory values

Na—144, K—5.9, Cl—103, CO<sub>2</sub>—27, BUN—19, SCr—0.8, Glucose—93  
Ca-7.4, Mg—1.9  
Troponin I <0.03, <0.03  
CK-MB 1.8, 1.3  
CK 219, 102  
Albumin = 4.2

### Diagnostic tests

ECG—normal sinus rhythm, left ventricular hypertrophy with QRS widening, T wave abnormality  
CXR—cardiomegaly  
Echo—left ventricular hypertrophy, dilated left atrium, thickened aortic valve, EF~30% L and R

#### Suggested Facilitator Questions:

1. What is the primary diagnosis for the patient?
2. What is the treatment plan? Why?

### Patient summary

A 31 year old male with new onset chest pain was admitted for a possible acute coronary syndrome event and hypertension urgency/emergency. Patient was given nitroglycerin, clonidine, and metoprolol in the emergency room to reduce his blood pressure. Patient was admitted to the ICU and prescribed the acute coronary syndrome protocol until laboratory data were complete. Patient was given continuous labetalol infusion along with aspirin, heparin, and felodipine. Patient's blood pressure decreased to 160/100 and patient was transferred to the step-down unit. Patient was discharge five days after admission for hypertension emergency with the following

Published in:

*The International Journal of Pharmacy  
Education and Practice*  
Vol 4, Issue 2, Fall 2008

home medications: aspirin 325mg po QD, metoprolol succinate XL 12.5mg po QD, lisinopril 5 mg po QD, pravastatin 40mg po QD, Isosorbide dinitrate 20mg po BID, hydralazine 10mg po TID.

## Appendix B

### Survey: Pharmacy Morning Report

1. Please indicate your current year in pharmacy school:

1. P1
2. P2
3. P3
4. P4

2. Please indicate the number of Pharmacy Morning Report (PMR) sessions you attended:

1. One
2. Two
3. Three

3. Please rate your overall participation in the discussions and question/answer sessions:

- a. Above average
- b. Average
- c. Below average

4. "I feel that PMR helped me better understand how to apply basic sciences material to a patient case scenario."

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

5. "I feel that PMR allowed me to apply my clinical knowledge to solving problems in a patient case scenario."

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

6. "I looked forward to participating in PMR sessions."

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

7. "I feel that the progressive disclosure format of PMR (releasing information when asked for) prompted me to use my critical thinking skills."

- a. Strongly agree
- b. Agree

Published in:

*The International Journal of Pharmacy  
Education and Practice*  
Vol 4, Issue 2, Fall 2008

- c. Neutral
  - d. Disagree
  - e. Strongly Disagree
8. "There was insufficient time allotted for the PMR sessions."
- a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
9. "PMR helped me understand how my current pharmacy studies are applicable to future courses."
- a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
10. "PMR should be incorporated into the pharmacy curriculum."
- a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
11. "I have recommended to my fellow students that they should participate in PMR."
- a. Frequently
  - b. Occasionally
  - c. Never
  - d. I recommended that students NOT attend PMR
12. "The involvement of basic sciences and clinical faculty in PMR sessions was beneficial in helping me understand the material."
- a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
13. "Overall, I feel that PMR was a positive learning experience."
- a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

14. Please use the space below to describe how PMR benefited you in your pharmacy education.

15. Please use the space below to describe how PMR could be improved to provide a better learning experience.

16. Please use the space below to provide any other feedback regarding PMR.

17. Which topics would you prefer to be addressed in future PMR sessions?