

A Pharmacy HIV Clerkship Rotation: A Unique Model for Pharmaceutical Care

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INTRODUCTION

Since the first publication in *Morbidity and Mortality Weekly Report* (June 5, 1981) identifying an unusual and devastating immune deficiency syndrome in five homosexual men, the AIDS (acquired immunodeficiency syndrome) epidemic has continued to grow and spread throughout all sectors of our nation's population (1, 2). To respond to the growing needs of patients infected with HIV (human

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immunodeficiency virus), health care providers of all disciplines must be prepared to provide care and therapeutic management. The role of the pharmacist will be increasingly important because of multiple drug regimen monitoring and home care provisions. With this in mind, an HIV clerkship rotation was developed to provide future pharmacists with experience in the provision of pharmaceutical care to these patients. In addition, those participating in the rotation have the unique ability to maintain continuity of care by therapeutically managing patients in the inpatient and outpatient setting.

PURPOSE

The purpose of this article is to describe an HIV clerkship rotation we developed using the infectious disease (ID) clinic and the inpatient internal medicine unit.

ROTATION LOCATION

Walter Reed Army Medical Center (WRAMC) is an 800-bed hospital with decentralized pharmacy satellites and unit-dose drug distribution. The Pharmacy Department also supports a large outpatient population through its ambulatory pharmacy.

A research pharmacy satellite is located in the infectious disease clinic on the seventh floor of WRAMC and adjoins an inpatient medical unit. The pharmacist in the research pharmacy directs activities in the following areas:

1. Henry M. Jackson Foundation for the Advancement of Military Medicine: Manages investigational protocols and investigational medications located at WRAMC and directs activities at participating sites.
2. Outpatient ID Clinic: Provides drug information, patient medication consultation, and medication monitoring primarily to HIV patients and patients participating in ID research protocols.
3. Inpatient Medical Unit: Monitors HIV patients when admitted on the adjoining unit.
4. Research: Implements and conducts pharmacy research in the ID area for the Henry M. Jackson Foundation.

The pharmacy satellite is supported by one pharmacist and one pharmacy technician from the Henry M. Jackson Foundation.

ROTATION DEVELOPMENT

The HIV clerkship rotation was developed because of its unique ability to provide continuity of care to HIV patients by providing therapeutic drug management during inpatient and outpatient visits. Because the satellite is located in the infectious disease clinic across from the ID fellows' office and in close proximity to the ID attending physicians' private offices, there is the opportunity to interact readily with the infectious disease staff by providing drug information and patient monitoring.

The limitation to this practice site for a clerkship rotation is that when a patient is admitted to the hospital, he or she is placed under the care of one of five internal medicine teams. This prevents the pharmacist from becoming a member of one team and thus having the ability to monitor all of the HIV patients along with the team. Instead, the pharmacist must work individually with all of the teams to monitor the patients and, if questions arise, follow up with the individual physician responsible for the patient. Although this may not be the most efficient way to work with the medical team, it was thought that the rotation would offer the clerkship student the opportunity to learn about this disease, provide therapeutic impact through monitoring interventions, and learn about the home care considerations when intravenous therapy or multiple oral/injectable drug regimens are required. In addition, efficient interaction and intervention does occur with the ID attending physicians/fellows who also monitor these patients because the pharmacist is routinely in contact with them.

Rotation objectives (Appendix A) and a reading materials notebook were developed. One of the unique objectives incorporated into this rotation was discussion of the sociopolitical and pharmacoeconomic effects of this disease nationally, as well as internationally. In addition, because inpatients and outpatients are involved, the clerkship students gain experience in the decision-making process of drug product and drug delivery system selection. Several patients must be maintained on IV therapy and/or subcutaneous

(SQ) injections. It becomes a challenge for the pharmacist to provide medication regimens in easily administered and efficient delivery systems without compromising quality of life or drug therapy advantage when these patients are discharged. This is one of the unique learning experiences that the clerkship student gains in the rotation.

ROTATION EVALUATION

Five post-Pharm.D. clerkship students have completed the rotation. A standard evaluation form of the rotation experience was provided by the college. Because this rotation did not include medical rounds with one specific team and therefore differed from other clinical rotations, we thought it necessary to ask the clerkship student to compare the HIV rotation to other clinical rotations in which they had participated. The results are listed in Table 1. The evaluation form from the College of Pharmacy indicated that all five students rated the rotation as excellent and that all five would recommend the rotation to other students.

We attributed responses that ranked a number 3 to the fact that the patient was monitored during both inpatient and outpatient visits. The requirement of coordinating home care for these patients

Table 1. Clerkship Student Responses on Rotation Evaluation

In comparison to other clinical rotations, this rotation allowed me the opportunity to:

	Responses*
1. Interact with physicians	3, 3, 2, 2, 2
2. Interact with nurses	3, 2, 2, 2, 2
3. Make therapeutic decisions	2, 2, 2, 2, 2
4. Understand the patient and his/her disease state	3, 3, 3, 3, 3
5. Be responsible for the patient's drug management	2, 3, 2, 2, 2
6. Make an impact on the patient's care	3, 3, 2, 3, 2

*1=to a less degree; 2=to the same degree; 3=to a greater degree

after monitoring them while they were hospitalized further enhanced the students' understanding and sense of responsibility for the patients' care and clearly was consistent with the concept of pharmaceutical care.

DISCUSSION

This clerkship rotation exemplifies a pharmaceutical care model in which the patient is monitored and maintained on a continual basis, including hospitalization and home care. The disease state of these patients requires continuity of care and follow-up. We believe that the students gain valuable experience by learning about the management of HIV patients. They also learn about the decision-making process for maintaining the quality of care for these patients during home care while meeting the challenge of cost containment. We acknowledge that this rotation has a limitation: no specific team manages the care of these patients when they are hospitalized. However, this did not appear to hinder the learning experience for the clerkship students, as measured by their evaluation responses. Although student interaction with the various teams responsible for the patients and maintenance of therapeutic monitoring services can occur, a comprehensive understanding of the patient and efficient communication occurs when students work directly with the medical team. This should continue to be the norm for a clerkship rotation.

CONCLUSION

This is an example of a clerkship rotation that was developed to emphasize continuity of care in the HIV patient population with emphasis on quality of life and socioeconomic impact. Preliminary evaluation from our students indicates that a lack of student rotation with the medical team does not appear to decrease the quality of the rotation; however, the value of such a rotation is recognized. Clerkship rotation development and evaluation should include inpatient and outpatient drug therapy considerations.

REFERENCES

1. Gottlieb MS, Schanker HM, Fan PT, Saxon A, Weisman JD. Pneumocystis pneumonia—Los Angeles. *MMWR Morb Mortal Wkly Rep* 1981;30:250-2.
2. Centers for Disease Control. HIV/AIDS surveillance report. Atlanta, GA: Centers for Disease Control, April 1992.

APPENDIX A

HIV CLERKSHIP ROTATION*Pharmacy Service**Walter Reed Army Medical Center
Washington, DC*

Goals: The goals of the Human Immunodeficiency Virus (HIV) Infection rotation are:

1. To understand the epidemiology, diagnosis, clinical manifestations, and treatment of HIV infection.
2. To gain an appreciation and understanding of the societal and political forces that are impacting on this disease.
3. To thoroughly understand the diagnosis and treatment of the common opportunistic infections that are associated with HIV infection.

Learning Objectives:

1. Given an HIV infected patient who has started zidovudine therapy, be able to thoroughly counsel the patient on the medication.
2. List the *Pneumocystis carinii* pneumonia (PCP) prophylactic drug regimens and be able to discuss the advantages and disadvantages of each.
3. Given a patient with one of the following opportunistic infections, be able to recommend suitable therapy and provide appropriate counselling for the patient:
 - a. *Pneumocystis carinii*
 - b. CMV retinitis
 - c. Toxoplasmosis

- a. *Pneumocystis carinii*
 - b. CMV retinitis
 - c. Toxoplasmosis
 - d. Cryptococcal meningitis
 - e. Cryptosporidiosis
 - f. *Mycobacterium avium* complex
 - g. Herpes infections (simplex or zoster)
4. Be able to discuss therapies used in various research protocols at Walter Reed Army Medical Center.
 5. Given a newly diagnosed HIV patient, be able to discuss the clinical manifestations of the entire continuum of the disease.
 6. Be able to discuss the sociopolitical impact of this disease both in national and international terms.
 7. Given a list of patients on the acute care ward, collect appropriate patient-specific data.
 8. Provided with a potential patient or therapy related problem, establish an appropriate plan.
 9. Given a case, properly organize and present the case to the preceptor or pharmacy staff.

Methods: During the HIV rotations, the student shall:

1. Attend the ID Staff/Fellow lecture (Tues 0703-0830).
2. Attend ID Case Studies (Fri 0730-0830).
3. Attend Grand Rounds (Fri 1130-1230).
4. Monitor the therapeutic progress of the HIV infected patients on the acute medicine ward (Ward 75).
5. Present at least one patient case and/or review one journal article for the Pharmacy Inservice.
6. Meet with the preceptor daily to discuss cases.