Articles

Clinical Training in Human Immunodeficiency Virus Disease for Community Physicians

The Los Angeles Experience

PETER J. KATSUFRAKIS, MD, *Los Angeles, and* STEPHEN E. RADECKI, PhD, *Long Beach, California*

In the past decade, the increased number of persons being treated for infection with the human immunodeficiency virus (HIV) has placed an enormous burden on specialty clinics. This is especially true in Los Angeles, where care of patients with the acquired immunodeficiency syndrome (AIDS) has been termed a "crisis" situation. Especially in its early stages, HIV disease can be appropriately managed by primary care physicians who provide patients with medical and psychological counseling and refer them to specialists when major AIDS-related complications develop. Physicians completing their training as recently as 5 years ago, however, received little systematic preparation in the care of HIV-infected patients and thus may lack important skills such as the ability to recognize opportunistic infections early in their course. By means of a 1-week intensive preceptorship in a high-volume AIDS clinic, we are preparing community physicians to assume a more active role in providing care for this growing patient population. In the preceptorship, participants receive one-on-one training from specialists in infectious diseases, pulmonary diseases, and hematology and oncology, as well as from internists and family physicians.

Evaluation of the clinical experience demonstrated a greater level of confidence on the part of program participants in treating HIV-infected patients and showed that participants screen and test high-risk patients in their practices and devote a substantial proportion of their practices to caring for HIV-infected patients.

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The care of persons with the acquired immunodeficiency syndrome (AIDS) in Los Angeles County presents multifaceted and growing challenges to the health care delivery system. Since 1981, more than 13,000 AIDS cases have been reported in Los Angeles County, and 4,000 patients are still alive.[1] Based on an epidemiologic projection of the AIDS epidemic in the county, the number of living patients with AIDS is expected to peak at 6,700 in 1993. By then, 31,000 additional persons in the county will be infected with the human immunodeficiency virus (HIV) for a total of 37,700 persons potentially under care,[2] or approximately 2 for each practicing physician in the county.[3]

The growth of the epidemic has strained the county's health care delivery system[4] and raised questions concerning the role of primary care physicians in providing care for this rapidly increasing patient population. Between 1984 and 1989, the percentage of primary care physicians in Los Angeles County who had evaluated a patient for AIDS or HIV infection in the preceding six months grew from 27% to almost 75%.[5] Over the same period, the proportion of primary care physicians with at least one AIDS patient in their practice grew from less than 1% to 40%.[5] A 1985 survey of county physicians' willingness to treat AIDS patients found that three fourths would refer them, and 91% believed that most community physicians are unprepared to treat AIDS patients.[6]

National surveys of primary care physicians have revealed that 68% to 77% believe that they have a responsibility to treat HIV-infected patients or have stated their willingness to provide care to these patients,[7,8] but 83% indicate that they need to know more about HIV infection.[7] Findings such as these reflect the fact that physicians completing their training as recently as five years ago received little systematic preparation in the care of HIV-infected patients. Even among third-year residents in internal and family medicine, 61% expressed concerns about the adequacy of their training in ambulatory care for patients with AIDS.[9] The most extensive experience to date in caring for these patients has been accrued by specialists and in inpatient settings. National projections analogous to the Los Angeles County data cited previously indicate a growing need for trained primary care providers to assume more of the care for HIV-infected patients—a change that has been supported by professional and government organizations.[10,11]

The care of patients with early-stage HIV infection conforms to traditional roles of primary care medicine: providing medical care, psychosocial support, and patient education. Specific components of primary HIV care include an HIV-focused history and physical examination, education concerning the natural history of the illness, and counseling regarding preventing transmission of the virus. With progression to AIDS, the patient's problems, although complex, are still manageable by primary care physicians,[12] at least between acute episodes, providing the patient with the guidance, support, and continuity required by any patient with a serious chronic illness.[13]

From the AIDS Education and Training Center for Southern California, Department of Family Medicine, University of Southern California School of Medicine, and the University of Southern California/California Medical Center Family Practice Residency, Los Angeles (Dr Katsufrakis); and the University of California Irvine/Long Beach Memorial Medical Center Family Practice Residency, Long Beach, California (Dr Radecki).

Reprint requests to Peter J. Katsufrakis, MD, CMCLA Family Practice, 1414 S Grand Ave, Ste 100, Los Angeles, CA 90015.

ABBREVIATIONS USED IN TEXT

AIDS = acquired immunodeficiency syndrome
HIV = human immunodeficiency virus

Of course, not all primary care physicians have the full range of clinical skills necessary to care for HIV-infected patients. Additional training and clinical experience are required, and hospitals and medical centers must recognize the importance of primary care.[12-14] One study has shown that greater experience caring for at least some of the complications of HIV infection leads to improved patient survival.[15]

Traditional sources of continuing medical education, such as lectures, seminars, publications, and self-testing programs, may be valuable but seldom provide the depth and clinical experience necessary to care for HIV-infected patients. Moreover, an AIDS-related continuing medical education program carried out among primary care physicians in Los Angeles County showed no effect on their competence to deal with AIDS patients, consistent with other studies that show a limited impact of traditional continuing medical education aimed at unselected audiences of physicians.[16] A survey of Los Angeles County physicians showed that either hospital inservice training or a short rotation through a university AIDS clinic is perceived as an effective means for community physicians to learn about AIDS and revealed that more than 40% of physicians would avail themselves of an AIDS clinic rotation if one were offered.[6] We describe a clinical rotation designed to provide community physicians with experience caring for patients with HIV infection or AIDS.

Clinical Training in HIV Disease for Primary Care Physicians

The clinical training program is an intensive one-week preceptorship in an ambulatory care setting developed for community physicians, physician assistants, nurse practitioners, and third-year residents. The overall goals of the program are to supply primary care providers with the knowledge and skills necessary to manage the complications of HIV infection commonly seen in an outpatient setting and to increase the number of clinicians working with HIV-infected patients in the community. The following specific goals determined the structure and content of the clinical preceptorship:

- Develop proficiency in identifying patients at risk for HIV infection.
- Increase knowledge of the symptoms and findings associated with the opportunistic complications of HIV infection.
- Enable program participants to employ essential diagnostic tests and pharmacologic therapies rationally and effectively.
- Expand the range of problems cared for by primary care providers and develop appropriate referral practices.
- Supply a strategy for maintaining proficiency in the face of rapidly changing knowledge.

The clinical training program is conducted by the AIDS Education and Training Center for Southern California, which is funded by the Health Resources and Services Administration to provide AIDS education for primary care providers in Los Angeles, Orange, Ventura, Santa Barbara, Riverside, and San Bernardino counties. The University of Southern California serves as a primary site, providing an intensive clinical preceptorship as part of its AIDS education activities. A list of similar training centers throughout the nation and the areas served by each has been published elsewhere.[17]

Most of the clinical preceptorship takes place in the multidisciplinary HIV/AIDS clinic of the Los Angeles County-University of Southern California Medical Center. The clinic, established in 1985, cares for approximately 2,500 patients needing 3,000 patient visits per month. Of these patients, 54% have an AIDS-related condition, 38% have AIDS as defined by Centers for Disease Control criteria,[18] and 8% are asymptomatic but seropositive for HIV. A recent demographic analysis showed that 25% are Hispanic, 15% are African American, 1% are Asian, and the rest are non-Hispanic white; 4% of clinic patients are women. Homosexuality or bisexuality is the major risk factor for HIV infection in 90% to 92% of patients. Clinic staff members coordinate outpatient and inpatient management of patients with AIDS and AIDS-related complex and of HIV-positive patients with mild opportunistic infections. The clinic operates morning and afternoon sessions five days a week, along with one evening session per week. In the past, the clinic used ten examining rooms, three offices, and one treatment room to provide care for a substantial portion of AIDS patients receiving care in the county. Overcrowding in the clinic resulted in a waiting period of as long as six months, prompting extensive media coverage. The overcrowding has been relieved by the construction of a three-story outpatient clinic dedicated to HIV patient care, which was completed in June 1991.

The clinic is designed so that specialists come to it rather than patients being referred to other specialty clinics. This arrangement provides an ideal setting for the week-long preceptorship, during which participants interact with specialists in infectious diseases, neurology, epidemiology, pulmonary disease, and hematology and oncology, as well as general internists and family physicians.

Specialty clinics address needs not met in the AIDS clinic, such as the evaluation of ophthalmologic or surgical problems. Mental health needs are addressed by a team of psychiatrists, psychologists, nurses, and social workers. In addition to standard examinations, special procedures performed in the clinic include venipuncture for emergency blood tests; arterial puncture for blood gas analysis; bone marrow aspiration and biopsy; lumbar puncture; thoracentesis; skin biopsy; the administration of blood transfusions, infusions, and medications; and parenteral hydration. These procedures allow for a fairly comprehensive workup and treatment in an outpatient setting, decreasing the average length of hospital stay for inpatients. The clinic is affiliated with the University of Southern California School of Medicine, which is a member of the AIDS Clinical Trials Group funded by the National Institutes of Health and a member of the California Cooperative Treatment Group for AIDS Research; this affiliation provides patients with access to numerous experimental therapies for HIV infection and its complications under investigational protocols.

The patient volume and staff expertise provide a useful setting for training primary care professionals to care for HIV-infected patients. The training program is designed for physicians who have already reached a certain level of com-

		Monday	Tuesday	Wednesday	Thursday	Friday
Morning	Activity	Orientation HIV Risk Assessment Test Counseling	Cytomegalovirus Clinic	Primary Care	Primary Care	Primary Care Mental Health
	Faculty Specialty	Family Practice	Family Practice Infectious Disease Ophthalmology	Internal Medicine Infectious Disease Neurology	Family Practice	Family Practice Psychology
	Location	Classroom	Clinic	Private Practice 1	Private Practice 2	Clinic
Afternoon	Activity	Intake Clinic	Primary Care Tuberculosis Clinic	Primary Care	Kaposi's Sarcoma Clinic	Primary Care Wrapup
	Faculty Specialty	Family Practice	Infectious Disease Pulmonology Family Practice	Internal Medicine Infectious Disease Neurology	Hematology	Family Practice
	Location	Clinic	Clinic	Private Practice 1	Clinic	Clinic

Figure 1.—The curriculum for clinical training in diagnosing and treating human immunodeficiency virus (HIV) disease is shown for a typical 1-week session.

petence with basic knowledge regarding HIV infection. Candidates are selected for this clinical preceptorship on the basis of their experience in diagnosing and managing HIV infection and also based on the proportion of minorities and medically indigent persons they serve. To be accepted for a clinical rotation, candidates must submit an application and other documentation and complete an informational form, which serves as a pretest and indicates the knowledge and experience level of the applicant. The goal in selecting trainees is to increase the number of trained providers caring for populations at risk for HIV infection, which are currently underserved. Training is available to physicians and physician assistants from the six-county service area at no cost to the trainee. Trainees from outside this area have also been accepted as space permits.

Description of the Course

The purpose of the clinical preceptorship is to enable trainees to manage common, chronic, HIV-associated conditions and to diagnose and refer life-threatening complications at an early stage in their presentation. Specific objectives of the preceptorship are that, following completion of the course, trainees will be able to

- Provide appropriate initial evaluation of HIV-infected patients and subsequent health surveillance,
- Counsel patients regarding maintaining their health and reducing the risk of transmission to others,
- Recognize and treat common minor complications of HIV infection,
- Recognize early signs and symptoms of major complications and appropriately treat patients or refer them for definitive treatment, and
- Serve as a resource to other clinicians for managing HIV-infected patients.

Trainees spend one full week in the clinical training program. Training takes place during patient visits, with emphasis on clinical instruction in the context of direct patient care. One half-day is spent in the classroom reviewing HIV-associated pathologic disease and a clinical approach to HIV-infected patients; the rest of the week is spent in direct patient care. Physician specialists model appropriate primary care and supervise the trainees' evaluation and treatment of patients. Throughout the experience, one-on-one teaching is provided by the supervising preceptor during rotations in the initial evaluation/intake clinic, primary care clinics, cytomegalovirus clinic, pulmonary clinic, Kaposi's sarcoma clinic, and in two private medical offices. Training rotations take place every week, with the exception of holiday weeks, and are available throughout the year. The schedule for a typical week is shown in Figure 1. Only two trainees are admitted for each week.

Educational experiences conducted away from the medical center include visits to two private medical offices (Figure 1) that care for HIV-infected patients, which allow trainees to compare their experiences in a county-run clinic with the level of care provided in a private office. Instruction in counseling patients before and after testing for HIV infection is also available through a state-sponsored anonymous testing site.

A comprehensive syllabus supplements clinical experiences.[19] Chapters focus on the general clinical skills necessary to evaluate HIV-infected patients as well as on specific diseases and pathologic processes, which are categorized by organ system. The syllabus also contains patient referral resources and sources for physicians to update their knowledge and maintain proficiency.

After completing the one-week course, trainees are interviewed to assess their satisfaction with the preceptorship. A follow-up assessment of trainees' knowledge and practice patterns relative to HIV-infected patients is conducted between 6 and 12 months after the completion of training.

Results of Evaluation

An assessment of trainees' experiences immediately following training indicates overwhelming satisfaction with the preceptorship. Most trainees state that their expectations have been met and that, as a result of training, they could now diagnose and treat HIV-infected patients.

A practice profile of 21 community physicians who completed clinical training during the first two years of the

course,* measured over a six-month period from June through November 1990, showed that each of these physicians identified an average of 84 patients at risk for HIV infection (9% of all patients seen) and recommended HIV testing for an average of 74 patients over six months. Of the 21 participants in the training program who were profiled, 19 (90%) provide care for HIV-positive patients at least until symptoms develop and most refer their patients to specialists only when major AIDS-related complications develop.

Program graduates reported that 5% of the patients seen over the preceding six months were HIV-positive and indicated that their level of comfort in providing counseling to HIV-positive patients had increased: "much higher" compared to pretraining level, 9 (43%); "higher," 10 (48%); "the same," 2 (9%). An equivalent change was shown for participants' level of confidence regarding the care they provide to these patients.

Ratings of the usefulness of the knowledge and skills acquired during the clinical experience showed that intake experience and primary care experiences within the AIDS clinic were rated as most useful. Specialty rotations within the AIDS clinic (cytomegalovirus clinic, pulmonary clinic, dermatology and Kaposi's sarcoma clinic) were rated highly but below the primary care experiences, whereas the private practice experiences and mental health clinic were rated as less useful. In the private practice training sites, participants noted that they experienced a reduced level of hands-on patient care compared with training received at the AIDS clinic.

Discussion

A national survey of primary care physicians' experience and opinions regarding HIV infection showed that two thirds had treated a patient with AIDS and that three fourths had treated an HIV-positive patient. Despite this, only 42% would welcome an AIDS patient into their practice, while 48% would rather refer patients with HIV infection.[7] This outlook is reinforced by a California-based study showing that most primary care physicians lack the knowledge and skills to assume responsibility for the care of patients infected with HIV.[20] The effect of these factors is to place an excessive burden of care on specialized providers[21] that could be alleviated if primary care physicians assumed greater responsibility for this care.[13]

Although this training program directly addresses the need for more skilled primary care professionals in one region, it serves as a model for other institutions to use in training the medical community to deal with the AIDS epidemic. Many aspects of the preceptorship can be adapted to other facilities training professionals to manage HIV infection.

This training program is most readily adapted to other medical centers that provide care to a large number of HIV-infected patients in an environment allowing ready access to specialists. In this setting, training could easily be provided by designating one or several physicians as educators to instruct trainees during the course of ongoing patient care. A physician and medical education specialist could support training activities by preparing supporting curricular materials. Candidates for training could initially be solicited from local medical societies, hospital staffs, or public health clinics; subsequent marketing would include physicians already serving patients known to be HIV infected or at risk (such as persons using intravenous drugs), but who need additional training and have not yet participated in a similar training program.

The educational needs of the local medical community should determine the focus of any training program. If significant numbers of persons have not yet become infected with HIV in the program's geographic area, more appropriate training would be targeted toward identifying persons at risk and counseling those persons to be tested and to avoid high-risk behaviors. Alternatively, communities where AIDS is present will have a growing need for professionals able to give effective primary care, including an awareness of diagnosis and treatment of opportunistic complications.

In areas not near a medical center that cares for a large number of HIV-infected patients, the need for trained primary care professionals is perhaps even greater. Resources for training may be limited, but a workable plan for education regarding HIV diagnosis and treatment should be feasible. Assessing community educational resources provides a starting point. Public health clinics or private physicians already serving HIV-infected patients may have experience and expertise that can be used to coordinate training of other physicians.

The AIDS epidemic represents a present and growing danger. Knowledge remains our most effective weapon to limit its effects; even if the spread of HIV were halted completely, however, the reservoir of undiagnosed infection gives every physician in the United States a high probability of treating someone infected with HIV. Well-trained physicians have the tools to fight many of the complications of this disease; untrained physicians put their patients at risk for needless morbidity and mortality. Educating primary care physicians to treat HIV-infected patients should be a cornerstone in our fight against AIDS.

*In addition to community physicians, 59 residents, 2 nurses, 13 physician assistants, 12 nurse practitioners, and 1 dentist have been trained at the AIDS Education and Training Center for Southern California. An additional 14 community physicians who completed training during the second half of 1990 are excluded from these evaluation results.

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INHERIT TENSE

Other people inherit
paid-off mortgages
and blue chip stocks,
porcelain figurines
and heirloom jewels—
family estates
valuable as fatted calves.
My ancestors left me
a deficient heart
and calcium deposits,
compounding cholesterol
and high-yield hypertension—
half-empty bottles
of nitroglycerin and Percodan.
So, I sip non-fat milk
instead of spooning
thick clots of cream,
dish up oat bran
instead of savoring
smoked duck pate,
nosh handfuls of nuts
instead of gnawing
blood red meat.
I'm banking
on my own
flesh and blood
that I'll be saved
on account
of myself.

MARAEL JOHNSON
Del Mar, California