

(mean of 5.5 visits in the previous year). Many family physicians directly encounter the kind of patient suffering that this study describes. How do we constructively meet this clinical challenge? Illiteracy might be a risk factor that deserves a place on our patients' problem lists along with tobacco use, childhood sexual abuse, or sedentary lifestyle. Improved skills at identifying and acknowledging illiteracy could help the physician develop rapport with patients and increase the effectiveness of the physician. Patient education efforts might also be more successful if they do not excessively rely on the printed word. Finally, knowledge of and referral to appropriate literacy programs might help reduce both physician and patient frustration, improving all our health.

Our struggle to read the medical meaning of an association between literacy and health exposes the "medicalization of health" in contemporary society. Societal investments in the important determinants of health, such as food, shelter, and education, could have a greater impact than expenditures for medical services. Family physicians will need to speak clearly and look past our office walls to influence and orchestrate the social systems that have an impact on the health of our patients.

Glenn S. Rodriguez, M.D.
Eric M. Wall, M.D., M.P.H.
Portland, OR

References

1. Grosse RN, Auffrey C. Literacy and health status in developing countries. *Ann Rev Public Health* 1989; 10:281-97.
2. Weiss BD, Hart G, McGee DL, D'Estelle S. Health status of illiterate adults: relation between literacy and health status among persons with low literacy skills. *J Am Board Fam Pract* 1992; 5: 257-64.

Universal Precautions

As I watched the family practice, internal medicine, and anesthesiology residents tensely working to stabilize the 60-year-old mother of three who has been a dear patient of mine for the past 10 years, I was aware that our purpose was singleminded. Could we get her through the

cardiovascular collapse that made her cold, clammy, pale, and somewhat incoherent? "The lines" were all-important. Without them and the intravenous miracles they could produce, "the tube" would be next, and then what?

Later, in the intensive care unit, the patient was holding on to a still-tenuous life-death balance. For the physicians and nurses, the inserting of more lines (femoral, arterial, and Swan-Ganz) became all-consuming. It was when the resident continued to stab toward a disappearing radial artery that I started to take stock. Perhaps it was because I felt my patient's pain. Perhaps it was because the resident was technically clumsy. As if to make a critical situation better (and to release my subconscious thoughts that a more experienced resident would not be struggling so), I said, "She was negative on an HIV test a year ago." The nurse woke me up: "No one's HIV-negative."

The frenetic activity went on for about an hour. The patient was doing better and would, in fact, survive. I had time to reflect. While San Francisco General Hospital cares for great numbers of patients with AIDS and infectious diseases, precautions have been anything but universal. Some of the treating physicians did not wear gloves; none wore masks or goggles, although some wore their glasses. On one level, carelessness was understandable. The medical challenge was critical. There was no time for diversion. The patient was an ordinary 60-year-old woman. What secrets could there be? In fact, there were hardly any. Her sexual, drug, and transfusion histories were unremarkable. She did not have human immunodeficiency virus (HIV) infection or hepatitis. She lived with her retarded 25-year-old son, who first came under my care for treatment of dilantin-induced eosinophilic pneumonia. Knowing little about sex, nothing about sexually transmitted disease, and probably not understanding the overlapping emotions of love, sex, and attention, he had become the adult victim of sexual abuse by an

Submitted 28 January 1992.

From the Family Practice Residency Program, San Francisco General Hospital and the Department of Family and Community Medicine, University of California, San Francisco. Address reprint requests to Ronald H. Goldschmidt, M.D., Director, Family Practice Inpatient Service, San Francisco General Hospital, San Francisco, CA 94110.

HIV-infected neighbor. He is HIV-infected. Because they lived together, she thought she should be tested. An unusual story, of course, but for the family-oriented physician, unusual stories are rather usual.

I use this melodramatic but true vignette to remind all of us of health care worker vulnerability to infection by blood-borne pathogens. The Centers for Disease Control (CDC) universal precaution guidelines provide the framework for minimizing occupational risk.¹⁻³ Recommendations include using gloves when handling body fluids, wearing masks and goggles when there is the possibility of a body fluid splash to mucous membranes, and avoiding contact with patients' body fluids when there are breaks in the health care provider's skin. Sharp instruments should be safely discarded, not disassembled. Body substances considered to be infectious include blood; tissues; cerebrospinal, synovial, peritoneal, pleural, pericardial, and amniotic fluids; semen; and vaginal secretions. Body fluids not thought to be infectious to which universal precautions do not apply are feces, nasal secretions, sputum, sweat, tears, urine, vomitus, and saliva (except in the dental setting when saliva is contaminated by blood).

Although we know the importance of protection against transmission of blood-borne pathogens, studies regularly show that health care workers do not do a very good job observing those precautions. This "noncompliance" appears to occur in most settings (offices, clinics, hospitals, and emergency departments) and spans most of the health care professions. Physicians in all specialties are "noncompliant" with universal precautions. Part of the problem is our difficulty with behavioral change and the way we handle guidelines and regulations.

Behavioral change is, of course, difficult. When patients fail to change risky behavior, we see it as an illness or as a problem they can't (or don't really want to) control. But when physicians fail to change behavior, we rationalize it. We continue dangerous habits on the basis of pragmatism (changing will be inconvenient, inefficient, or might create other problems, e.g., "If I have to use gloves I will lose sensitivity and won't feel the vein as well"), denial ("I know my patients; it's not a risk here"), or disdain and arrogance ("Yes, I should wear gloves; I guess

I'm just a creature of habit"). We know what we should do, but even in the face of danger we change our behavior grudgingly. Misinformation and sloppiness also contribute to inadequate precautions.

Our failure to follow guidelines does not always show evidence of inadequate practice. Guidelines are often written by a group dominated by persons with a single topic as their principal (and, at times, only) issue. Their recommendations may be the answer to only one aspect of a larger problem. When guidelines create new problems, clinicians tend to reject them. In doing so, clinicians can be demonstrating wisdom rather than inadequate care.⁴ When groups develop their own practice guidelines, contempt for guidelines is minimized and compliance is usually greater. It would seem logical that guidelines that reduce personal risk (such as universal precautions) would be followed, but that is not always the case.

The findings of Freeman and Chambers in this issue of the *Journal* draw attention to the difficulty we have with both behavioral change and guidelines. Although the institution had developed and agreed upon their own body fluid precaution guidelines, the providers in this study did not comply. By this "noncompliance" and the failure to improve compliance through an educational intervention, the provider group seems to have been showing either an inability to change behavior or disregard for guidelines. Alternatively, it is possible that the providers found the guidelines excessive. The inclusion in this study of *urine* as a potentially infectious body fluid goes beyond official CDC guidelines. Urine is not generally considered an infectious body fluid. Were providers applying body fluid precautions to the other specimens but failing to observe precautions with urine? Probably not, as venipuncture precautions were quite inadequate as well.

Recommendations, guidelines, and compliance are somewhat abstract and theoretical. Occupational exposure and injury, however, are very real and very personal.^{5,6} I recently had the opportunity to speak with "Jane Doe, R.N.," the nurse who contracted HIV from a needlestick injury at San Francisco General Hospital on her first day at work in 1987. Her observations offer special insight for all health care providers. She

pointed out that instructions to health care workers to slow down, pull back, and be careful are correct, but in the face of hectic patient care and understaffing, these precautions break down. It is a cruel irony when victims are blamed. Technique is rarely flawless. Accidents are common. Even when care is not hectic or overwhelming, internal quality improvement is not what it should be. Nurses, she said, are reluctant to criticize other nurses' techniques. Physicians, of course, are fairly notorious for this reluctance as well. We are generally uncomfortable with professional criticism despite recognizing its importance in patient care.

Nurse Doe also emphasized that hospitals and practitioners must be responsible for the safety of their staffs. We must deem it important enough to have the proper equipment and procedures to assure that safety is the highest priority. All needlestick or other injuries are not *de facto* technique problems. Are containers for sharp instruments provided in every room? Are the safest intravenous devices being used regardless of cost? Are gloves, masks, and goggles readily available? Are there ongoing courses on precautions? Is the institution prepared to deal with an accidental needlestick injury?^{7,8} Even with today's cost-cutting pressures, safety must be paramount. Difficult funding choices regarding basic services may need to be made. Certainly, the new improved gift shop, the more state-of-the-art scanner, and the new desk for the office must wait.

Jane's final observation was somewhat surprising: "It is amazing how we *don't* talk about AIDS among ourselves. Our denial of personal risk is so great that at times we are unable to have a comfortable discourse to discuss risks realistically." If we fail to discuss occupational exposure risk, it probably is no accident. To some degree, we need to deny our fears to be able to function. The chances of blood-borne pathogen transmission to health care workers are too great for comfort. About 200 health care workers contract potentially fatal hepatitis annually; 0.3 to 0.4 percent of needlestick injuries from an HIV-infected person result in seroconversion. Adding to the difficulty of talking about

risk are complex personal and political views that have polarized issues. Extremist views of all persuasions reflect partial truths but tend to impede productive dialogue.

It has been said that the way we respond to the acquired immunodeficiency syndrome (AIDS) epidemic will reflect upon us as a society. Similarly, how we deal with the issue of occupational risk will say much about our profession. Ideally, we need to observe precautions meticulously. Our institutions must assure maximum safety and have protocols and expert personnel ready to manage exposure-related crises. Our approach to treating HIV-infected persons and patients such as the 60-year-old woman with cardiogenic shock needs to strike a balance between caution and care. Indeed, as Jane Doe stated, we must face the risks, discuss them knowledgeably and intelligently with each other, and continue to care for all our patients without losing compassion.

Ronald H. Goldschmidt, M.D.
San Francisco, CA

References

1. Recommendations for prevention of HIV transmission in health-care settings. MMWR 1987; 36 (Suppl 2S):3-18.
2. Update: universal precautions for prevention of transmission of human immunodeficiency virus, hepatitis B virus, and other bloodborne pathogens in health-care settings. MMWR 1988; 37:377-82,387-8.
3. Guidelines for prevention of transmission of human immunodeficiency virus and hepatitis B virus to health-care and public-safety workers. MMWR 1989; 38(Suppl 6):1-37.
4. Stephens GG. Epidemiologic abuse. J Am Board Fam Pract 1990; 3:305-8.
5. Aoun H. When a house officer gets AIDS. N Engl J Med 1989; 321:693-6.
6. Aoun H. From the eye of the storm, with eyes of a physician. Ann Intern Med 1992; 116:335-8.
7. Public Health Service statement on management of occupational exposure to human immunodeficiency virus, including considerations regarding zidovudine postexposure use. MMWR 1990; 39(No. RR-1):1-14.
8. Goldschmidt RH. Accidental exposure to HIV infection by health care workers. J Am Board Fam Pract 1990; 3:129-31.