

# HIV-infected Health Care Professionals: Public Threat or Public Sacrifice?

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I find little difference between the HIV-infected homosexual or intravenous drug abuser who continues to have unrestrained sexual activity and the surgeon who is infected and continues to practice surgery. (Smith 1990, 452)

Dorsett D. Smith  
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Based on current evidence of risk, a comparative risk analysis, and the availability of the less restrictive alternative of improving infection control generally, prudence dictates that HIV-infected health workers continue professional practice [including invasive procedures], as long as they rigorously adhere to basic infection control practices and are functionally able to continue to work. (Barnes et al. 1990, 324)

There is no black or white here. The patient is right to have his emotions. But I'm a human being, too. I have the right to work. They don't have the right to know if I'm not affecting their health. (Wolff 1991a, A1)

Neal Rzepkowski  
Physician with HIV  
fired from Brooks Memorial  
Hospital, Dunkirk, New York

In a perfect world, . . . where people would listen to facts and act rationally, I would not have had to [fire Dr. Neal Rzepkowski]. But that is not the way reality is. This scares the heck out of people, and in a small community like this, the emergency room would be closed because of the outcry. It would not take a lot of people to wreak havoc. (Wolff 1991b, B2)

Richard Ketcham, President  
Brooks Memorial Hospital

**D**R. NEAL RZEPKOWSKI LEARNED THAT HE WAS infected with the human immunodeficiency virus (HIV) in 1985 while working at St. Clare's Hospital in Schenectady, New York. He informed his hospital supervisors. "They did not curtail me," he reported. "Nor should they have, because I was protected by human rights and by law" (Wolff 1991a, 10). He also informed selected patients when he thought they were "informed enough about AIDS to handle it." For example, he told a veterinarian, whose three children he had delivered, because he believed she would understand. When interviewed, the veterinarian said, "He was, in fact, a gifted doctor . . . I have never regretted for a moment receiving his medical care" (Wolff 1991a, 10). Continuing his policy of openness ("I have never hid [sic] from anyone about this" [Wolff 1991b, B2]), Dr. Rzepkowski also reported his condition to hospital authorities at Brooks Memorial Hospital, in Dunkirk, New York, where he began working in the emergency room in the spring of 1990.

In July 1991, shortly after the Centers for Disease Control (CDC) issued new guidelines for health care workers infected with HIV and HBV (hepatitis B), Dr. Rzepkowski was forced to resign his position at Brooks Memorial. Richard Ketcham, the hospital president, insists that there had been no risk to patients (his own friends and relatives had been treated by Dr. Rzepkowski), but he believes the CDC guidelines forced the decision. The guidelines call for HIV-infected health care workers to refrain from "exposure-prone" procedures, leaving it to "medical/surgical/dental organizations and institutions at which the procedures are performed" to identify which procedures are involved (Centers for Disease Control 1991b, 5). As an example of how concerns about liability are likely to compel the hospitals to assume a conservative stance, the Brooks Memorial Hospital board decided to consider even the removal

of stitches as an "exposure-prone" procedure. Because Dr. Rzepkowski was often the only physician available in the emergency room, it became impossible for him to continue.

The hospital also sent a letter to the 4,100 patients treated in the emergency room in the 18 months Dr. Rzepkowski had worked there, informing them that they might have been treated by an HIV-infected health care worker; the letter claimed there was "no risk" of infection. One man called the hospital shouting, "You took away my right to choose! You took away my rights!" Another said, "Yeah, he treated my wife and I'm angry. Someone ought to tell him he's not God" (Wolff 1991b, B1-2).

Dr. Rzepkowski defends the fact that he informed only selected patients of his condition, claiming, "They don't have the right to know if I'm not affecting their health" (Wolff 1991a, A1). The American Medical Association (AMA), however, takes a different view. At its June 1991 meeting, insisting that doctors must "do no harm," the AMA affirmed physicians' obligation to find out if they are infected, and, if so, either to cease performing certain invasive procedures or to disclose the fact to their patients, who would then decide whether to proceed with treatment (Wilkerson 1991). Thus both the CDC and AMA June guidelines required infected health care workers (HCWs) generally to refrain from certain invasive procedures; both allowed a special review panel power to grant an infected physician permission to perform the invasive procedures, provided they inform patients of their condition.

Late in the fall of 1991, these policies were modified, giving more power to local authorities to regulate and monitor the practice of infected professionals. In October, Congress passed a bill allowing state legislatures to adopt either the June CDC guidelines or substitute rules (Hilts 1991, A18). New York and Massachusetts indicated they would not follow the CDC guidelines (Bass 1991; Sack 1991). Nearly all professional organizations (Altman 1991c,d,e; Reuters 1991), ultimately including the AMA (Leary 1991, 38), refused to provide lists of "exposure-prone" procedures. Faced with these refusals, in late November the CDC released "draft revisions" (Altman 1991b; Centers for Disease Control 1991c) calling for local committees to review infected health care workers who perform certain invasive procedures. Committees were to restrict the performance of certain procedures on a case-by-case basis, after judging the competency of the physician to comply with infection control measures and to perform them without additional risk;

alternatively, the committees could require physicians to inform patients of their status. Within weeks, the AMA similarly modified its guidelines (Leary 1991).

The central issues raised so clearly by the June CDC and AMA guidelines do not disappear with the recent revisions, although they may be less visible. In fact, by leaving so much to the discretion of local committees, the guidelines open the door to highly variable and inequitable treatment. Because many cases like Dr. Rzepkowski's are thus likely to arise, it is crucial to understand the issues underlying it. My discussion focuses on the June guidelines and I return to the recent revisions in my concluding remarks.

### Workers Versus Patients: Risks and Rights

Do the CDC or AMA policies violate Dr. Rzepkowski's rights as a handicapped worker? Does the patient's right to be protected against the low risks of HIV transmission, or the right to know about those risks, constitute reasonable limits on the rights of an infected professional?

This conflict between the rights of the infected and the uninfected is the sharpest so far in the HIV epidemic. Early in the HIV epidemic, when parents fought to keep HIV-infected children out of school, resorting to violence in at least one case, the drama was high but the issue was not so complex. Although many could identify with the fears of the parents, once the risks of casual transmission from student to student were clarified as being immeasurably small, "right" emerged as clearly on one side and public sympathy was readily directed toward the infected children. Similarly, in employment contexts—except health care settings involving invasive procedures—the rights of HIV-infected workers have been broadly recognized as a matter of ethics and law, to the point of their inclusion in the recent Americans with Disabilities Act (ADA) of 1990 (Parmet 1990). In fact, the scientific assurance that HIV disease is not casually transmitted, but rather requires sexual contact or exposure to blood, set the stage for the conflict in Dr. Rzepkowski's case, where blood-to-blood contact is precisely the issue.

Health care workers themselves may have helped to build a strong public fear of blood-to-blood contact in health care settings. Physicians and dentists in large numbers, voicing exaggerated fears of the risks, have refused, sometimes loudly and openly, to treat patients suspected

of being HIV infected. Although many professional associations have insisted on a "duty to treat," other associations, notably of surgeons, have not ruled treatment of HIV patients to be a professional obligation, largely as a concession to the fears of their members. Many individual professionals have insisted that they never undertook any such obligations and have no duty to treat in the face of risks of infection (Daniels 1991). Even when a dentist is fined for turning away a patient with AIDS, as in two recent cases brought before the New York City Commission on Human Rights, it reminds the public that health care workers believe they have something to fear (Fill 1991, A14).

Whether or not these fears are contagious, they are widespread. A 1987 Gallup poll reported that 86 percent of people sampled thought patients should be told if their physicians had HIV (Gostin 1989, 32). A more recent survey showed that 59 percent of the sample thought surgeons with AIDS should be prevented from practicing; 52 percent thought dental hygienists and dentists should be excluded; 50 percent would bar nurses and 45 percent would prohibit physicians with AIDS from practicing (Gerbert et al. 1989). These fears were registered in the absence of a concrete example of transmission from professional to patient, an event that might intensify them.

That focal example or "signal accident," to use a term from the risk perception literature (Slovic 1987, 283), was provided by an initial CDC report that a female patient of an infected Florida dentist, Dr. David Acer, had herself become infected. Increasing its impact was the effective campaign launched by the patient to dramatize her plight, calling for stricter regulation of infected health care workers. Eventually, five of Dr. Acer's patients were found to have a strain of HIV similar to his, causing public fears—and media attention—to grow. The media vigorously reported the panic reactions that followed the "discovery" of other dentists, surgeons, or physicians practicing with HIV infection (Kantrowitz 1991). Dentists have been besieged by patients seeking reassurance that they do not have HIV infection and that they follow appropriate sterilization protocols (Muro 1991; Navarro 1991). Studies have so far revealed no likely cases of transmission to patients in all cases except Dr. Acer's, and, in his case, experts are by no means persuaded that the patients were infected by accidental exposure to Dr. Acer's blood (Altman 1991a, C3).

The CDC June 1991 guidelines were crafted in the context of this growing public fear and loud chorus, which included the AMA, calling

for more restrictive measures on health care workers. Did the climate of fear unduly influence CDC recommendations? Were the restrictions on infected workers performing invasive procedures in part a concession to those fears? Were the rights of infected workers sacrificed in a calculated attempt to dampen public fear or to ward off demands for even more restrictive measures? Or did the guidelines represent the best judgment of experts about the level of risk involved?

Posed in this way, the problem seems to be largely empirical, not moral. It would appear that we simply must find out how high the probability of transmission is from doctor to patient. At some specifiable level of risk, the rights of patients to protection or information outweigh the rights of handicapped health care workers to work. We would have a clear case of health care workers constituting a political sacrifice if the level of risk were not sufficient to justify the rights of patients limiting the rights of handicapped workers. This view presupposes the existence of a clear ranking of respective rights for each level of actual risk.

This picture oversimplifies the real issue in at least three important ways. First, because there is considerable *uncertainty* about the level of risk that exists, we may have to make a choice about where to place the burdens of a policy: on patients or on physicians. Gostin points to this as a key issue in the policy debate about CDC guidelines:

At the heart of the differences of opinion over the management of HIV-infected professionals is who ought to bear the burden of scientific uncertainty (professionals or patients) and should public health authorities err on the side of patient safety? There is no "correct" choice, but as a matter of public policy, I prefer to emphasize patient confidence and patient safety. (Gostin 1991, 142)

More remains to be said about the role of uncertainty here.

Second, *perceptions* of the level of risk differ greatly, even setting aside uncertainty about actual probabilities of HIV transmission. To many medical professionals and members of the public, even the low probability of HIV transmission is perceived as a serious risk. To many other experts, the probabilities of transmission suggest a small risk and therefore no need for restrictive measures on infected professionals. The disagreement here is thus not only between experts and the public, but also among experts from different domains. Professional biases may lead the experts to perceive risks differently. Thus an expert in public health measures may think the risks of HIV transmission too small to address

cost effectively by removing infected professionals from practice. An expert in risk management at a hospital will worry that standards of care are fluid and that a malpractice litigator may later attempt to seize on the fact that no steps were taken to eliminate a known risk. Professional biases here reflect the interests of different parties in assessing those risks. Whose perceptions of risk are to count? Must we respect the experts' judgments? Which experts? To what extent can we allow policy to reflect public fear, even if, by expert assessment, the fear is exaggerated and a response to it would be imprudent or even unfair public policy? This issue thus replicates the controversy about "technocracy" versus "democracy" that exists in many areas of public policy.

Third, there may be *moral disagreement* about where limits to rights should be drawn as a result of the risks of transmission. The simple picture that one principle takes priority over the other at a specifiable threshold of risks does not hold here. This should not surprise us. Rights, after all, are general and abstract notions. They draw their content from the *point* we have in asserting them in particular contexts, the *function* we hope they will serve in these contexts, and the *distinctions* we must make to extract the kind of protection we seek: shelter from particular harms or provision of particular benefits. These distinctions form a specific response to the actual threats we face in certain situations. Putting muscle on the schematic bones of a right involves pragmatic considerations, a body of assumptions about what is salient and relevant in the context of application. These assumptions derive from the point or function behind asserting this right.

The degree of objectivity or subjectivity of our perspective on risks will depend on pragmatic considerations. For example, patient rights to know and control the risks they face have developed as a defense against the paternalistic imposition of risks by physicians; there is thus a point in taking patients' perceptions of those risks more seriously than the experts' medical judgments. In contrast, handicapped workers' rights are intended to protect them against the exaggerated or fabricated perceptions of fellow workers and employers, and the tendency is to insist that the significance of the risks they impose on others be objectively determined.

There may be no easy way to specify our agreement on ranking these conflicting rights, in part because they are governed by different pragmatic considerations: one emphasizes patients' subjective perceptions of risks, the other stresses experts' objectively determined probabilities.

Moreover, the pragmatic differences may be reinforced by professional biases, which influence the different perceptions of risk. The simple picture of a threshold of risks is thus seriously misleading.

My goal is to shed light on the following policy questions: Should we allow infected health care workers to perform any procedures they are competent to carry out, relying on barrier and other infection control measures to reduce the chance of transmission, as the ACLU and other groups argued in hearings before the CDC? Should we oblige infected professionals to avoid seriously invasive or "exposure-prone" procedures, where the risk of transmission is theoretically greatest, as in the June CDC guidelines? Should we require professionals to inform patients of their status and allow patients to decide what risks they want to take, as the AMA June guidelines suggested? Should we engage in mandatory testing of health care workers to ensure compliance with restrictions that we believe should be imposed? Should we criminalize the failure to comply with such restrictions? To answer these questions, however, we must find good reason for favoring the rights either of patients or of health care workers, which means addressing some of the difficulties I have presented.

In my discussion I shall examine what we know about the probability of HIV transmission from infected professionals, and then compare it with the other probabilities of death we face in everyday and medical contexts. One way to discount the appeal to patient rights would be to insist that patient fears of HIV transmission are irrational. I resist this suggestion, noting that the strong paternalism required to make such a judgment is not justifiable; in fact, even if patients' fears are exaggerated or even phobic, it will nevertheless be rational for patients to reduce their fear by the "low cost" effort (to them) of switching from infected professionals. I will examine the suggestion, however, that if professionals have moral obligations to inform their patients or to refrain from imposing risks on them, obligations that can be derived independently of claims about patient rights to knowledge or protection, then we might short-circuit the controversy by appealing to those professional obligations. I will then discuss in more detail the difficulties underlying the conflict between the rights of patients and handicapped workers, explaining why resolution of this dispute seems intractable. I argue that we have good reason not to allow the full exercise of patient rights because this would make each of us worse off. Limiting patient rights leaves the rights of handicapped workers intact and leads us to ex-



pand our efforts to control infection. I will conclude by discussing the policy implications of this argument as well as the recent revisions of the AMA and CDC guidelines.

## The Probability of Transmitting HIV from Professionals to Patients

Despite the public panic about the risk of catching AIDS from their dentists or doctors, current evidence is that the probability of so contracting HIV infection is exceedingly small. Even those who acknowledge that the probability is small perceive and respond to the risk differently. In this and the next two sections I will summarize existing evidence about the probability of transmission, compare it with other risks encountered in medical procedures, and discuss the basis for different perceptions of the risk.

Our information about probability of disease transmission in health care settings is of two types. One source of information is the frequency of examples—usually clusters of cases—of actual transmission from health care workers (HCWs) to patients. For example, the CDC cites reports of 20 clusters of documented transmission of hepatitis B (HBV) from infected HCWs to more than 300 patients since serologic testing for HBV became available in the 1970s (Centers for Disease Control 1991b, 2). In contrast, there is only one cluster of likely transmission of HIV from a health care worker to patients: the five patients of the Florida dentist, Dr. Acer. Moreover, retrospective studies of the patients of several dentists, physicians, and surgeons who have HIV, involving the testing of nearly one-third of all their patients, revealed no other clusters of infected patients (Centers for Disease Control 1991b, 3; Lyall 1991, 21–2). We must not confuse these data, based on happenstance discovery and reporting, with real actuarial data about frequency of morbidity from a given source. Because these examples come to light retrospectively and in an uncontrolled way, rather than through a systematic screening process, we cannot rely on them to estimate the probability of transmission, although they may suggest the size of the problem.

The focal example of Dr. Acer's patients raises more questions than it has so far answered. One patient, with no other known risk factors, first experienced a febrile episode characteristic of seroconversion one month

after undergoing a molar extraction by Dr. Acer, which is consistent with an exposure during the procedure. Moreover, she and four other patients had a genetic strain of HIV that was similar to Dr. Acer's. These two facts, although strongly suggestive, do not establish that Dr. Acer transmitted his virus to each of these patients through accidental exposure to his blood. There was no clear evidence that Dr. Acer punctured his skin in any of these cases. There was, however, evidence that he did not adequately sterilize equipment between patients. Investigators thus consider it to be an open question whether accidental exposures to his blood was responsible for infecting any of these patients. They are actively investigating other avenues, including the bizarre hypothesis that Dr. Acer might have deliberately injected the patients with his blood (Altman 1991a, 3; Boyd 1991, 3). If the route of infection was from contaminated instruments—that is, from patient to patient—or was deliberate, then we point the finger of blame at the wrong target in singling out infected HCWs to restrict their practices. Much more effective would be a resounding effort to improve infection control techniques.

More generally, the puzzles surrounding the cluster show how inappropriate it is for opinion generated by one highly publicized example to act as a determinant of public policy. Particularly in this case, the “signal accident” is not even a clear-cut example of what it has been reported to be: an infected worker accidentally giving his or her virus to a patient. Even if the case proves to involve accidental transmission from Dr. Acer to his patients, we should not allow it to determine policy because, by itself, it tells us little about the probability of transmission and the degree of risk.

The second source of information about the probability of transmission derives from more careful study of the mechanisms underlying transmission in these and related examples and from the construction of a statistical model based on them. For example, the most likely mechanism for transmission would involve an infected health care worker undergoing a minor puncture wound, for example, from a needlestick or bone chip or scalpel puncture, and bleeding directly into a patient. How likely is a patient to be infected by such an accident? To answer this question we need a model that estimates frequency both of skin punctures and of subsequent transmission of the virus. Surveillance of events like glove punctures only yields approximations of the frequency of puncture wounds; nor can we rely on mere reports of punctures be-

cause some may go undetected or unreported (Hagen et al. 1988). Even surveillance of individuals known to have percutaneous exposures to infected blood through needlesticks depends on assumptions about which cases of seroconversion involve other risk factors. For example, rather than weighting the probability that other risk factors play a role, the CDC refuses to attribute seropositivity to needlesticks if the health care worker falls into another risk group; this policy may underestimate the needlestick seroconversion rate. Similarly, modeling the transmission of infection from health care worker to patient on estimates of the opposite direction of transmission requires further assumptions, for example, about the likelihood of bleeding through a glove after a puncture as opposed to a needle with infected blood delivering the virus directly from patient to worker.

The result of these assumptions and uncertainties in the statistical model is that the probability of transmission can be estimated only within a considerable range, sometimes greater than an order of magnitude. Thus the CDC estimates the risk of HIV transmission after a seriously invasive procedure to be in the range of 1/40,000 and 1/400,000 (Centers for Disease Control 1991a). The probability of transmission from a dentist is even lower: between 1 in 260,000 and 1 in 2.6 million (Kinsley 1991, 4). (By contrast, a widely quoted estimate of the risk of transmission to health care workers from an infected patient ranges from 1/4,500 and 1/130,000 [Hagen et al. 1988, 1358].)

It is important to remember that these estimates are based on the assumption that the health care worker (or patient) is HIV positive. If we want to know the probability of a patient becoming HIV positive from an invasive procedure when we do not know the HIV status of the health care workers, we must further multiply these low probabilities by the incidence of HIV in the health care worker population, which is the same generally low incidence that exists in the entire U.S. population. Thus the probability of becoming infected with HIV through an invasive procedure would be less than 1 in 8- to 80-million if 0.5 percent of health care workers are infected. It is important to emphasize how sensitive these estimates are to the assumptions underlying the statistical model used by the CDC. For example, the CDC estimate may rely too heavily on the following mechanism: a needle that sticks an infected health care worker then sticks a patient. If direct bleeding from an infected worker's cut takes place, the risks may be higher, yet we have no good way to quantify these risks (Dickey 1991).

Using its own estimate of the probability of HIV transmission from health care worker to patient, the CDC estimates that between 13 and 128 patients may have been infected during invasive surgical procedures in the last ten years (Rosenthal 1991a, C5). Nevertheless, many critics believe this estimate to be high, and, in fact, *no such patient has yet been identified*. In contrast, 40 health care workers who were infected by patients have been identified, which is compatible with the general view that health care workers are at higher risk than patients. Again, using the CDC estimate, some analysts have focused not on the probability of HIV transmission from an infected worker to a single patient, but rather on the cumulative risk imposed on all patients the worker treats. Thus Gostin supports the CDC guidelines because the risk of 1 in 40,000 becomes a risk of 1 in 40 that some patient will be infected if a surgeon performs 1,000 operations over a period of years. The CDC estimates that an infected surgeon who continues to practice for seven years has a 1 in 12 chance of transmitting HIV infection to some patient (Kinsley 1991, 42); of course, the risk to each patient remains in the range of from 1 in 40,000 to 1 in 400,000.

It is instructive to compare these probabilities with those involved with hepatitis B transmission. The presence of hepatitis B e antigen (HBeAg) is associated with higher levels of circulating virus, and we find higher infectivity from needlesticks where the source is HBeAg positive. The CDC reports about a 30 percent risk of HBV transmission following percutaneous exposure to HBeAg-positive blood (Centers for Disease Control 1991b, 3). The CDC estimates that 12,000 health care workers become infected with HBV each year through exposure to patients' blood, resulting in 250 annual deaths and about 1,000 active HBV carriers (Centers for Disease Control 1989). The risk of transmitting HIV through a single percutaneous exposure to infected blood is about 100 times less than that of HBV, that is, a risk of 0.3 percent for HIV compared with 30 percent for HBeAg-positive blood (Centers for Disease Control 1991b, 3; Gerberding et al. 1987; Henderson et al. 1990; Marcus 1990). Of course, HIV is far more likely to be fatal, once contracted, than HBV. Still, the overall risks of becoming infected and then dying from HIV and HBV infection as a result of exposure to blood in health care settings are fairly similar. The CDC estimated that the risk of death due to HBV infection after an invasive procedure by an HBeAg-positive surgeon was .7 to 13.2 per million. The CDC estimates

that risk of death after an invasive procedure by an HIV-positive surgeon is 2.4 to 24 per million (that is, 1/40,000 to 1/400,000). Given the lack of precision in the component estimates, this is a very similar level of risk (see Feldblum 1991).

Despite the similarity in overall risk of death in this setting, many people, including health care workers, are far more fearful of HIV than HBV and view the risk to themselves as higher. The fact that HIV is more likely to be fatal if contracted seems to be the salient feature of the risk and scares people more than the fact that they are just as likely to die from transmission of HBV as from HIV in health care settings; there is also greater stigma attached to death from HIV. Perhaps this perception of risk helps explain why it was only in the wake of the attention paid to the single cluster of possible HIV transmissions that the CDC has made more restrictive recommendations in its June 1991 guidelines for HCWs infected with either HIV or HBV. The evidence about HBV transmission has been available for some time and has never led to such preemptive restrictions. Of course, the CDC guidelines would have been even more questionable had restrictions been passed for HCWs infected with HIV but not with HBV.

Follow-up studies of HCWs exposed to HIV in ways other than percutaneous inoculation reveal no measurable risk in these cases at all. This fact should compel us to limit our *reasonable* concerns about HCWs to contexts that are likely to lead to percutaneous exposures. Thus the CDC 1991 guidelines urge the more careful definition of "exposure-prone" procedures and explicitly deny the appropriateness of any restrictive measures for infected "HCWs with HIV or HBV who perform invasive procedures not defined as 'exposure-prone,' provided the infected HCWs practice recommended surgical or dental techniques and comply with universal precautions and current recommendations for sterilization/disinfection" (Centers for Disease Control 1991b, 5).

The CDC guidelines are intended to guard against the kind of unjustifiable exclusions of health care workers from employment that we have seen in many cases. For example, patients stopped seeing a pediatrician in private practice after a local newspaper revealed that he was HIV positive, even though the CDC argued that he posed no risks to patients (Appelbome 1987). Similarly, after a New Jersey otolaryngologist was diagnosed as having AIDS, his hospital privileges were suspended. The hospital restored them with the proviso that he present all patients with

an informed consent form describing his infection and the “potential risk of transmission.” He was effectively prevented from continuing professional practice (Sullivan 1989). Nevertheless, the 1991 guidelines leave physicians like Dr. Rzepkowski vulnerable to discharge, and we have yet to see if that is justifiable.

## Probabilities of Death: Some Comparisons

How should we react to the CDC estimate of our chances of infection from an HIV-infected surgeon? I shall ignore the uncertainties in the underlying statistical model and simplify the CDC estimate by referring to it as a 1 in 100,000 chance of such infection; this figure is roughly mid-range between the probabilities of 1 in 40,000 and 1 in 400,000 given by the CDC and is similar to a recent estimate of 1 chance in 83,000 per hour of surgery (Lowenfels and Wormser 1991). Correspondingly, the chance of being infected by a surgeon when we do not know his or her HIV status would drop to about 1 in 20,000,000. Is this a big risk? How does it compare with other chances of death we take in everyday and medical contexts? Even if we should neither expect nor demand that people judge and respond to risks in ways strictly proportional to their underlying associated probabilities of death, it is important to place this probability among others we routinely face.

The following activities all involve a risk of about 1 in 1,000,000 of death from the cause noted in parentheses (I ignore the differences in reliability of actuarial and theoretical estimates in what follows): living two days in New York City or Boston (air pollution); traveling 6 minutes by canoe (accident); traveling 10 miles by bicycle (accident); traveling 1,000 miles by air or 300 miles by car (accident); living with a smoker for two months; summering for two months in Denver (cancer from cosmic radiation); drinking 30 twelve-ounce cans of diet soda (cancer from saccharin) (Wilson 1979). These probabilities of death are thus at least *20 times greater* than the probability that we will contract HIV and die when we undergo an invasive procedure and do not know the HIV status of our surgeon. Similarly, we have over ten times the chance of being killed by lightning, four times the chance of being killed by a bee, and about twice the chance of being hit by a falling aircraft as we do of being infected with HIV by surgeons in general. If we know our

surgeon is HIV positive, then our probability of contracting HIV (1 in 100,000) is similar to the probability of death (from the causes noted above) in the following everyday activities: taking a one-hour canoe ride while on vacation; letting our child bicycle two miles each way to school for one month; drinking one diet soda a day for ten months; living with a smoker for a year and a half; teaching for two years in Denver.

We can also compare the probability of becoming infected with HIV during an invasive procedure with other chances we take in medical contexts. Our chance of dying from anesthesia while on the operating table is approximately 1 in 10,000—roughly ten times greater than our chance of being infected by a surgeon known to have HIV infection and 2,000 times greater than our chance of being infected by invasive procedures in general. Our risk of death from anaphylactic shock reaction to first-time exposure to penicillin is about 1 in 100,000. Thus a mother who routinely asks that her toddler be relieved of the pain of a throat infection incurs that risk (Landesman 1991). I doubt that mothers are often specifically informed of this probability; at most, I suspect that the pediatrician might say, “There’s a minute chance of an allergic reaction,” while readying the child for injection.

Because the CDC estimate informs us of the extra chance of death we face from being operated on by an HIV-infected surgeon, it may be particularly instructive to consider the other risks involved when we choose surgeons. Suppose we must choose a surgeon to perform a coronary artery bypass graft. One recent study shows that the best surgeon surveyed had a 1.9 percent mortality rate for his procedures; the worst had a 9.2 percent mortality rate (O’Connor et al. 1991). That means that the extra risk of death faced by patients selecting the worst surgeon is over 7 in 100, or *7,300 times the extra chance of death the patient would face if his surgeon were HIV infected*. The same study showed that the riskiest medical center had a 3 percent higher mortality rate than the safest: choosing the wrong center involves 3,000 times the extra risk imposed by going to a surgeon who has HIV. If the existence of such variability were better known, patients might well demand information about the success rates of individual practitioners and centers. Of course, if everyone insisted on this information, it might become harder to obtain it: practitioners’ incentive to disguise their failures would increase dramatically. We might even be worse off because it would then become harder to learn what contributes to high failure rates (Berwick 1991).

## Rationality and Perceptions of HIV Transmission Risks

A recent *Newsweek* poll, confirming the Gallup poll noted earlier, showed that 90 percent of Americans want health care workers to tell them of their HIV status (Gross 1991, 20). A majority of doctors at a recent AMA meeting said they would not seek treatment from an infected doctor (Gross 1991, 20). U.S. senators voted 81 to 18, supporting an amendment by Jesse Helms, to send doctors to jail who fail to inform patients that they are HIV positive. Yet Americans, doctors, and even U.S. senators normally face without concern much higher probabilities of death involved in everyday life and medical contexts. The AMA does not, after all, require surgeons to report their individual fatality rates to patients.

Is this apparently inconsistent response to the underlying probabilities irrational or otherwise morally indefensible? Posing the question this way echoes a long-standing debate in the field of risk perception and public policy. Some years ago it was noted that expert judgments of risk tended to correlate much better than lay judgments with probabilities of death (Slovic, Fischhoff, and Lichtenstein 1979). Moreover, public budgets appear skewed by these "distorted" public perceptions of risk; judged by expert standards, we spend too much money regulating some risks and too little regulating others. One response to this "gap" between expert and lay perceptions of risk was to invest in "risk communication" efforts, with the aim of learning how to educate the public better about "real" risks in order to obtain its support for efficient promotion of public health and safety. Unfortunately, public perceptions seem to resist such educational efforts.

Systematic studies of risk perception have revealed a rich set of factors affecting nonexperts' judgments of risk. Thus voluntariness, familiarity, dread, and controllability are important factors; so too are judgments about the benefits accompanying the risks and how those benefits are distributed. Many of these factors have some heuristic value, enabling people to track information relevant to these risks and to adjust their behavior with some plausibility, given the lack of more precise information available to nonexperts (Slovic, Fischhoff, and Lichtenstein 1982). It would be wrong, then, simply to assume that we have an instance of irrational or otherwise unjustifiable response to risk wherever there is a



perception of risk accompanied by a response that is disproportionate to the underlying probabilities.

This point becomes clearer if we examine it from an individual perspective. How people individually or socially perceive and respond to the risks involved in various activities is not just a function of the underlying probabilities or even their awareness of them. Jane, who likes to feel fit, relishes a canoe or bicycle ride, while being repelled by the prospect of “polluting” her body with a diet drink and risking cancer, which she especially fears; yet she is aware of the underlying risks involved. James, more sedentary by temperament, accepts the risks of the soft drink but thinks canoeing too dangerous; he remembers the reaction in his home town when a child died in a canoe accident. Mario, who is terrified by the prospect of dying in a plane crash, chooses to drive, where he can exercise some control over outcomes, even though he is aware that flying imposes lower probabilities of death. Some kinds of death may be preferable to others (people have special fears of cancer and AIDS), and we especially dread some outcomes, for example, if they involve catastrophes.

Just as nonexpert perceptions of risk reflect individual preferences and values, so too judgments about risk made by experts from different professional domains will reflect their interests and training. A public health official, noting the very low probability of HIV transmission from professionals to patients and the very high cost for little health benefit, will probably view the risk as very low, better addressed by broad infection control measures than by singling out infected professionals for restrictions. A hospital counsel or risk manager, anticipating public reaction or fearing shifts in standards of care, may view the risks of transmission from an infected staff physician as too great to ignore. We should not discount as irrational different reactions to the same probability of transmission.

How individuals (or experts) react to risks thus reflects their many other preferences, interests, and values. In weighing benefits against risks, people rely on their individual conceptions of what is good in life. Professionals react to risks in ways largely dictated by the interests, goals, and standards of their professions. Insisting that people should respond primarily to the underlying probabilities may involve us in a strong form of paternalism. In effect, it implies that people do not have a clear conception of what is good for them if they do not focus solely

on their chances of death. Yet it does not seem irrational for an individual to say, "I will invest my resources to reduce my dread of certain outcomes. We all have to die, and even if generally I like an environment with less chance of death, I also must live comfortably in whatever environment I am in. I would rather face somewhat greater chances of death while feeling more secure than face lower chances of death while living in fear." The point can be generalized. The public, responding to expert complaints about distorted public budgets for risk management, can say, "We prefer feeling more secure, despite somewhat greater chances of death, to being actually safer but full of unreduced fears. Public investment has more than the goal of simply reducing chances of death."

An even stronger point can be made if we think about choices in medical settings. The mother who is aware of the risk of fatal allergic reaction to penicillin might say that the risks are outweighed by the benefits; there may be no alternative with a better ratio of benefits to risks. Yet if she were contemplating surgery for her child and knew that the surgeon was HIV infected, she could avoid the risk of HIV transmission solely at the cost of switching surgeons. There is nothing irrational about viewing one risk as routine and the other as a special risk to be avoided. The same mother contemplating surgery might also try to find a family member to donate blood that might be needed in the surgery, again trying to avoid the risk of about 1 in 100,000 of HIV infection through the public blood supply. Although her behavior may reflect a magnified fear of HIV transmission, exaggerated by the social stigma attached to HIV disease (Landesman 1991, 657), it may also reflect a reasonable risk-benefit calculation. The mother can achieve the benefit of transfusion without any cost except switching to a more trusted donor. Put another way, the cost of living with the dread of contracting HIV is much higher than the cost of switching surgeons or finding a family member to act as donor.

While discussing a patient's right to be informed of a health care worker's HIV status, Gostin (1989, 33-4) remarks that this is a case in which the patient (or mother) not only wants to know something, but also will act on that knowledge to change what she does. From the individual perspective the knowledge seems both relevant and important. To this we can add that the patient's risk-averse behavior, even if it is motivated by exaggerated fear or phobia, is not individually unreasonable. The patient can dodge a low probability of a bad outcome—which

she “phobically” perceives to be an unacceptable risk—at low cost to herself. The cost of living with the dread that accompanies not switching surgeons or donors is higher than the cost of switching, even if the reduction of probability of death is small and of an order we elsewhere tend to ignore.

The reasonableness of the individual patient’s switching behavior means that we cannot justify a straightforwardly paternalistic refusal to acknowledge the patient’s desire to know about the HIV status of a health care worker. We are not, after all, protecting the patient from an action that all can see is irrational—even if we believe from the start that the person seems more afraid of HIV transmission than the probabilities justify.

These observations suggest that the problem now has the following structure: Underlying the policy choices we face is a controversy about whether, given the risks of HIV transmission, to give priority to patient rights or to the rights of handicapped workers. One way to resolve the dispute would have been to denounce the strong public fears of HIV transmission as irrational, an approach that now seems unjustifiably paternalistic. An alternative strategy would be to short-circuit the dispute about rights, claiming that HIV-infected professionals have obligations, accepted when they entered their profession, either to refrain from imposing risks on their patients or to inform them of the risks. If this strategy is to short-circuit the debate about rights, these obligations must themselves not derive from the rights of patients and they must imply that professionals waive any conflicting rights they have as handicapped workers. I turn to this strategy now.

### Professional Obligations: “Do No Harm”

When Dr. Rzepkowski discovered he was HIV-infected, remember that he informed his superiors, he continued to perform invasive procedures, some of them “exposure prone,” and he told selected patients of his status, but only those he judged capable of understanding the situation. Did he have a professional moral obligation to refrain from those procedures? Did he have a professional obligation to inform all of his patients on whom he performed such procedures? Did the fact that he told only the patients who he thought would not overreact mean that he felt an obligation to inform them, but carried it out only in a self-serving way?

Or was his telling any patients merely supererogatory from his point of view? Then, telling some, but not others, violates no obligation.

If, as some professional organizations insist, he had both obligations, it might short-circuit the debate about conflicts between patients' rights and the rights of handicapped workers. It might be claimed that infected professionals have waived appeal to those rights when they entered the profession and undertook its special moral obligations. On the other hand, some may object that professional obligations cannot conflict with the general moral or legal rights that all other workers have. We need to examine the claims about professional obligations carefully, especially as professional organizations do not even agree what they are.

It is important to distinguish the claim that a physician has an obligation to refrain from imposing the risks of HIV transmission on patients from the claim that the physician is obliged to obtain consent from patients who have been informed of that risk. The *obligation to refrain* at least appears to be one that a physician might incur independently of any prior patient rights. For example, if the physician has a duty "to do no harm," and if imposing a risk of HIV transmission constitutes doing a harm, then we need not first determine whether a patient has a right not to be harmed before deciding the physician has a duty to refrain. In contrast, the *obligation to inform* is less plausibly construed as an obligation that a physician incurs independently of patients' prior rights to be informed of the physician's status or of the risk of transmission in certain procedures. If a physician's professional obligations include respecting the rights of patients, and patients have a right to know about the risk of HIV imposed by their surgeon, then the physician's obligation to inform is *derived* from the prior right of patients. I believe assertions about physician obligations generally take such a view: Physicians have an obligation to inform *because* a patient has a right to know and to make decisions about what risks to take. It is possible, however, to state that physicians have an obligation to inform even though patients have no (prior) right to know. As I am unaware of any real proponent of that view, I will not consider it here. Instead, I defer discussion of an obligation to inform in favor of a later discussion of patients' right to know, from which I claim it is derived. In this section, I shall focus entirely on the position that Dr. Rzepkowski has an ethical (professional) obligation to refrain from certain invasive procedures.

Consider the AMA stance that there is such an obligation. The Judicial Council of the American Medical Association took the following po-

sition in 1988: “the Council believes that if *a risk* of transmission of an infectious disease from a physician to a patient exists, disclosure of that risk to a patient is not enough; patients are entitled to expect that their physicians will not increase their exposure to the risk of contracting an infectious disease, even minimally. . . . If a risk does exist, the physician should not engage in the activity” (American Medical Association 1988). Reaffirming and clarifying this statement in the aftermath of the Acer case, the AMA stated:

Physicians who are HIV positive have an ethical obligation not to engage in any professional activity which has an *identifiable risk* of transmission of the infection to the patient. . . . In cases of uncertainty about the risks to patient health, the medical profession, as a matter of medical ethics, should err on the side of protecting patients [emphasis added]. (American Medical Association 1991)

The AMA June guidelines specifically impose these obligations on physicians:

1. Individuals who are at risk of acquiring HIV infection, and who perform invasive procedures, should determine their HIV status.
2. Until uncertainty about risks is resolved, HIV-infected physicians should refrain from performing invasive procedures that pose an identifiable risk or should disclose their HIV status, performing the procedure only if there is informed consent from the patient.

It is not clear just how much work “uncertainty” about the level of risk does here. It could be very important: if uncertainty about the level of risk can be removed, and the level turns out to be very low, then there may in fact no longer be a duty to refrain. In commenting on the AMA position, however, Nancy Dickey, an AMA trustee, noted that “the risk of transmission from an HIV infected physician during certain invasive procedures is very low but real. So some restraint on invasive procedures is necessary as a matter of the oldest precept of medical ethics—that *the physician shall do no harm*” (Dickey 1991, 2). This seems to suggest that the AMA already views the level of risk being discussed by the CDC and other experts as implying a duty to refrain.

The AMA position that physicians must impose “no identifiable risk” on patients seems much too strong. Physicians and other health care workers will often carry infectious conditions that might have an impact

on patient health, in some cases a serious impact. Even if that danger of infection is remote, it represents an “identifiable risk” and no surgeon—or surgical nurse—should ever operate. Broadening the “no identifiable risk” requirement to include other mechanisms for harming patients, encompassing all the factors that might affect physician performance, such as stress, fatigue, medication side-effects, substance abuse, family problems, we see the requirement is much too strong (Barnes et al. 1990, 315–16). Indeed, it would oblige many surgeons who generally perform worse than the best surgeons to refrain from surgery because they impose identifiable risks on patients—in the case of coronary artery bypass surgery, a risk up to 7,300 times greater than the risk of HIV transmission.

A weaker claim might be the one that a physician has a duty to refrain from imposing any identifiable *avoidable* risk. If HIV-infected surgeons know their status, they can avoid imposing the risk, but surgeons may not know they have other infectious conditions, or may be unaware of the effects of conditions like marital stress, making those unavoidable risks. Similarly, there will always be a range of “competent” surgical performances, and it would be very costly to remove all surgeons from practice who were competent but not optimal.

This weaker claim will be either too strong or too weak, depending on our interpretation. If we are willing to devote enough resources and effort to eliminating an avoidable risk, we can probably reduce it significantly. That is true for the identifiable avoidable risks involved in other infections, various performance-affecting conditions, and even in “below optimal” but still competent performance. Interpreted this way, the weaker claim is still too strong. However, if we interpret “avoidable” to mean “avoidable given an appropriate weighing of the benefits against the costs,” then the claim is too weak. The costs of removing all HIV-infected health care workers from exposure-prone procedures probably outweighs the benefits. (I will return to this point in a later section.) In any case, many other avoidable risks are probably far more cost effective to reduce than HIV transmission from infected health care workers. It appears arbitrary to single out this avoidable risk from among all the others, many of which are greater risks that are routinely ignored.

We cannot simply modify the AMA position so that it says, “Impose no avoidable risk to which the patient does not consent.” That claim presupposes that the patient is entitled to consent to all risks, even the

risks of HIV transmission in this case, and that the duty to refrain is itself *derived* from the right of the patient to consent. Because we were considering an *independent* duty to refrain, this way to save the AMA view will not work without changing the ground rules for the discussion.

Another way to try to save the AMA position would be to make it depend heavily on there being *uncertainty* about the degree of risk. Then the position might be, "Given considerable uncertainty about the risk of HIV transmission, the physician has a duty to refrain from imposing it." This position implies that the duty to refrain should be lifted if the level of risk turns out to match the CDC current estimate: that very small risk is already deemed insufficient to warrant a duty to refrain if, as I have just argued, the standard of "no avoidable risk" is too strong. There is a problem, however, with simply hiding behind uncertainty and claiming that the CDC estimate may be too low: it feeds public hysteria about the risk. Of course, the statistical model underlying the CDC estimate can be challenged at crucial points and the risk may be somewhat higher than its estimate (although, if true, we would expect more observed cases of transmission). The small likelihood, however, that the risk is *much* higher should not count for as much as this argument from uncertainty requires. It is odd, for example, to weigh the mere possibility of a higher risk of HIV transmission more heavily than the known fact of an extra risk in going to a surgeon who performs poorly, which is *much* higher than the extra risk of HIV transmission under even worst-case scenarios.

I have not actually shown that there is no ethical or professional duty to refrain from exposure-prone procedures. Strictly speaking, I have only shown that the AMA has not given us adequate grounds for deriving a duty that singles out HIV transmission in this way; moreover, if we have such a duty in the case of HIV transmission, on anything like the grounds the AMA cites, then it commits physicians to withdrawing from more medical procedures than the AMA or anyone else believes appropriate. It is logically possible, then, that HIV-infected surgeons have a duty to refrain, as do all other surgeons, in many cases where their performance is viewed as routine. Because no one is claiming—and many would reject—such an outcome, the argument for a duty to refrain in the case of HIV infection is unpersuasive.

Because we cannot short-circuit the controversy about the conflicting rights of patients and infected health care workers, I turn to it now.

## Do Patients' Rights Override Handicapped Workers' Rights?

The firing of Dr. Rzepkowski seemed to raise a rather straightforward question: Are the risks of his infecting his patients sufficiently great that we must count patients' rights to know those risks, or to be protected against them, more than his rights as a handicapped worker? Put this way, the question suggests that there is a threshold level of risk beyond which one set of rights takes priority over the other, and that our problem is simply an empirical one of discovering whether the risks have reached that threshold. I want to develop here my reasons for thinking that such a picture is misleading and that the controversy has deeper roots than a mere empirical dispute about the level of risk.

We should suspect a deeper problem when we note a complex relationship between those rights and the choice of particular policy options. For example, the CDC's June guidelines specify restrictions on the procedures HIV-infected professionals can perform. This policy can be justified in two distinct ways.

One justification for the CDC policy ascribes limited priority to patient rights. It involves the claim that because the risks HIV-infected professionals impose in these procedures are "significant," therefore these handicapped workers are "not otherwise qualified" to perform the essential tasks involved in their job; their rights as handicapped workers are *limited* to contexts in which they impose no significant risks on others. (The technical or legal term "significant" will be explained shortly.) On this view, had the risks not been significant, the rights of the handicapped workers would have taken precedence over any patient right to know and to consent to the risks entailed in the procedure. In effect, on this account, significant risks form the undisputed boundary between these rights. If this were the whole story, the simple picture of a threshold would seem to be adequate. But it is not the whole story.

A different justification for CDC policy ascribes *full priority* to patient rights. It presupposes that the rights of patients to know and to consent to the risks they face take precedence over handicapped workers' rights, even when the risks imposed by HIV-infected workers are not "significant," as the term is understood in this context. Unfortunately, informing patients of the HIV status of professionals carries with it extra costs, including the broad violation of the rights of those professionals to medical confidentiality. Therefore we can accomplish the same bene-



fit to patients at a somewhat lower social cost by simply restricting the practice of the infected professionals. A more paternalistic variant of this justification presupposes that patients cannot reliably assess the risks of infection or poor performance imposed by professionals because professionals cannot or will not provide reliable information about the risks they impose, as opposed to the risks of the procedures themselves (Feldblum 1991, 2–3). Therefore, we must restrict the practices of individuals who pose a risk of transmitting certain infections. Both of the full-priority justifications of the CDC policy turn, not on the empirical and legal questions about whether the risks to patients are significant, but rather on moral and legal judgments that patient rights always take precedence over the rights of handicapped workers.

Because there are these two possible lines of justification for the CDC's June policy, demonstrating that the risks of HIV transmission to patients are not "significant" would fail to show that the CDC policy has no adequate justification. It might still be the case that we are morally required to give priority to patient rights. This renders the boundary concept of "significant risk" a distinction without force in the dispute. That is, even if "significant risk" defines the scope of handicapped workers' rights when they are in conflict with the preferences of other workers or their employers, it does not define their scope when they are in conflict with the stronger, more specific, and better defined rights of patients. In effect, patients have a right to know and to consent to—or to be protected against—even those risks that fail to count as significant in other employment contexts. Or so the full priority view claims.

A persuasive argument has been made that the probabilities of HIV transmission do not constitute a "significant risk" when we judge the risk from the perspective of employment discrimination law (Barnes et al. 1990; Feldblum 1991). First, a significant risk is not merely a "speculative" risk. In the absence of any real explanation of how Dr. Acer's patients became infected, however, and faced only with a statistical model, the CDC estimate of transmission risks appears to be speculative. In any case, the probabilities it involves make the risk a "remote" one, certainly a "minute" one. At most, it represents a minute elevation of risks of death generally present in medical contexts and usually tolerated without much notice. For example, we have long tolerated the risks of HBV transmission without restriction, although the current CDC regulations impose restrictions on both. We continue to tolerate much larger risks of death that derive from variations in the competence of

professionals or medical centers. These points count heavily toward concluding that the risk of HIV transmission for each patient is not significant.

Some who think the risk to individuals is admittedly small nevertheless consider the risk to the pool of patients treated by a physician to be significant; that is, they think the cumulative risk should be viewed as significant even if we are not impressed by the risk to a single individual (Gostin 1991). This change of focus may mislead us simply because we are unduly impressed by the larger probabilities that emerge in this context. For example, even though the cumulative risk seems high—for example, the 1 in 40 or 1 in 100 chance that a surgeon with HIV will infect a patient over the course of 1,000 exposure-prone procedures—to judge whether this risk is really significant would require us to compare this cumulative risk with the one arising from other sources in the context of surgical procedures. Because these cumulative risks are simply multiples of the risks involved in single cases, we should not be troubled by the higher probability in the cumulative case unless the risk in a single exposure also bothers us. The point is that each of us is not taking a chance of 1 in 40 or 1 in 100, but only of 1 in 40,000 or 1 in 100,000.

Significance is thus judged in an objective way when we are thinking about the rights of handicapped workers. We compare the underlying probabilities of harm with other risks people take in the same settings. This emphasis on objective characterization of the risk is no accident; it is a fundamental feature of what I earlier referred to as the pragmatics of the appeal to the rights of handicapped workers. The point of asserting that handicapped workers are otherwise qualified to perform their jobs unless they impose (objectively) significant risks on others is to defend them against standard forms of bias. Such workers are often discriminated against simply because fellow workers or employees believe that they impose risks. Employers often rationalize their reluctance to accommodate such workers by imagining the many risks they might carry with them. To defend handicapped workers, then, we must not let the subjective perceptions of risks held by others count at all. The pragmatics of the appeal to handicapped workers' rights thus leads us to discount subjective fears and to insist on high, objective standards of demonstrable risk, shifting the burden of proof to individuals who would claim that these workers create a significant risk and are thus not qualified for their jobs. This means that if the CDC estimates are wrong, and the probabilities of transmission are much higher, then the

risks would clearly become significant. The higher risks would mark a clear limit to the rights of infected workers and the CDC's June policy would be justified. Given the actual CDC estimate, however, and judging from within the pragmatics surrounding the appeal to the rights of handicapped workers, we should ignore the exaggerated fears of patients: there are no significant risks here, contrary to the perception of all those patients who comprise the public.

The argument about significant risk takes place from within the framework (including the pragmatics) imposed by the rights of handicapped workers. The attitudes of patients, on this view, are assimilated to the views of potentially hostile "others"—fellow workers, clients, employers—who would unfairly restrict their employment rights. This is not, however, the only framework that bears on this controversy.

Moral principles governing the rights of patients, including the right to exercise informed consent about medical procedures, have a certain history and function, and this history controls the strength and scope of these principles in the standard context of their application. They are intended to protect patients against the traditional imbalance of power inherent in the doctor-patient relationship and are drawn sharply to prevent physicians from paternalistically imposing risks, as was common not many years ago in the United States (and still prevails in many other societies). It does not matter that the more "objective" judgment of medical experts—physicians—is that a risk is small or that it is outweighed by the benefits of a procedure. Instead, we must let the subjective risk-benefit assessment of the patient be decisive if we are to assure control over risk taking. In a sense, the principle assuring that informed consent is obtained, or rather the standard manner in which it is applied (what I have called the pragmatics), exaggerates the threat in order to protect the patient.

What kinds of risks does a patient have a right to be informed about in the context of giving informed consent? The risks are sometimes described as those that a "reasonable person" would want to know about because they have some bearing on what he or she might decide to do. I have already noted that an overwhelming majority of people clearly want to know about the HIV status of the health care professionals who treat them. It is difficult to assert that what most people want to know is not what a reasonable person would want to know; the reasonable person standard should not imply that most people are unreasonable. Moreover, although the majority's perception of the risk seems exagger-

ated when we simply look at the underlying probabilities of transmission, their fear is great and they can reduce it at low cost to themselves by switching from infected professionals. Thus the information seems rationally related to the choices they face and is "material" to their decision; that is, it will make a difference to the outcome of their choice.

The pragmatics here are aimed at eliminating the scenario of physicians failing to inform patients of risks that they think are worth taking but are afraid that patients will disagree. Patients must remain the judge of what risks are worth taking. Given this overriding goal, the pragmatics stack the deck in favor of letting patients' subjective perceptions of the risk carry the day. In general, where risk taking is involved, we accept the right of people to consent to those risks: this is our general mechanism for distributing the benefits and burdens of risk taking. Only when employers or fellow workers appealed to imagined risks in order to justify refusals to give handicapped workers fair equality of opportunity did we impose more objective requirements on the assessment of risk.

One countervailing consideration to this argument is that courts have ruled in the context of tort litigation that "remote" and "minute" risks need not be revealed to patients. Because there are so many of these minute or remote risks, no professional can take the time to reveal them all. In any case, it would be impossible to predict which of these a "reasonable person" would want to know about. The "minuteness" of the risk of HIV transmission, judging solely by probabilities, is not decisive here because we already know that patients specifically want to know about it and view it as material to their decisions. It is not simply another minute risk, but a very salient one.

Another way to restrict the scope of patients' rights to information has a bearing on patients' perceptions of risk. Suppose a patient has racist views, for example, about the inferiority of doctors belonging to some minority group such as Asians or Jews. The fact that the patient perceives treatment by an Asian or Jewish doctor to carry a greater risk than treatment by some other doctor would not be sufficient reason to concede the patient the right to information about the religion or race of his physician. We would hardly condone switching behavior based on perceived risks with such racist roots (although the behavior probably occurs and there is little we can do to prevent it in a system that generally provides open choice of practitioners). Similarly, it might be claimed, the exaggerated perception of the risks of HIV transmission

may have their basis in other discriminatory attitudes, such as homophobia. The stigma attached to HIV infection may itself derive from homophobia and this relationship may lead to heightened perceptions of risk. If this were true, then allowing the rights of HIV-infected workers to be compromised by the discriminatory attitudes of patients would seem very much like permitting workers' rights to be limited by the discriminatory attitudes, including the perceptions of risk based on those attitudes, harbored by fellow workers or employers.

Although there is some merit to the claim that the stigma attached to HIV infection is rooted in homophobia, and we should not adopt policies that condone the effects of homophobia, it is also true that many people simply fear HIV infection for its obvious effect: death. Moreover, they think there is a risk of transmission because they are aware that there is a mechanism for transmission, and respected experts are concerned that statistical models of the probability of transmission suggest that some people will be infected in the course of receiving health care each year. Despite the partial analogy to the fabricated claims of risk traditionally used against handicapped workers, the risk of transmission perceived by patients cannot be dismissed entirely on this basis.

The conflict now takes this form: a risk that is not significant, judging from within the pragmatics of the rights of handicapped workers, is viewed as serious and material by patients. The issue cannot be settled simply by saying, "The probability is only 1 in 100,000." What is not at issue from within the pragmatics of patient rights is what the objective probabilities are; that is only a concern from within the perspective of the rights of handicapped workers. Unless we had an independent argument about which perspective on risks—which rights, that is—must be given priority, we cannot settle the question by simply saying, "The risks are (or are not) significant." We encounter this unusual source of indeterminacy because the rights of handicapped workers and patients rarely come into conflict and the pragmatics surrounding each generally does not have to take the force of the other set of rights into account. (Ronald Bayer first suggested to me that medical ethicists and public health experts appeal to conflicting moral frameworks when thinking about transmission risks; the position developed in this section is a variation on his suggestion.)

Can we find an independent argument that establishes which perspective on risks, or rights, should be given priority? I am not aware of any such general, independent argument. Handicapped workers' rights

derive from a general principle of distributive justice guaranteeing fair equality of opportunity and have substantial legal recognition, including the recent ADA legislation. Similarly, there is solid moral and legal support for the right to control one's body, including the risks that are imposed on it in medical contexts.

The absence of such a general argument might make the controversy seem intractable, at least at the level of risk involved in the CDC estimate. In the next section, however, I develop the claim that granting full priority to patients' rights as a way of responding to the risks of HIV transmission can make *each* of us worse off, at least if certain empirical assumptions are true. If this argument is persuasive, it gives us good and adequate reason to restrict the exercise of patients' rights in this instance.

### How We Can All Be Worse Off If We Each Try to Do Better: The Switching Dilemma

Although the probability of HIV transmission is very low, most individuals view it as a significant risk they want to avoid. Because the cost of switching health care providers is small, each of us can do better if we try to avoid the risk by seeking information about a physician's HIV status and switching if necessary. However, if we all do that, then we are each worse off. We would each be better off if we cooperated to refrain from seeking information about HIV status and acting on it. A situation with this structure is known in game theory as a many-person prisoners' dilemma. The fact that this structure is intrinsic to the Switching Dilemma, as I shall call it, has important implications for arguments about testing or practice restrictions on health care workers.

The situation I am describing is a very familiar one, arising in many contexts. Consider a standard example. We are all fishermen. If all other fishermen respect a limit on their catch, I can do better by exceeding the limit. If the others violate the limit, I would be a fool to abide by it. But if we all try to catch the most fish we can, then we each do worse than we would if we respected the limit because the fish population will collapse. Similarly, suppose we could all derive a significant benefit from the clean air that would result if we each invested a modest amount in an antismog device for our cars. If everyone else buys the de-

vice, but I do not, then I will be better off because I still get clean air but do not pay for it. If others refrain from buying the device, I would be a fool to buy one. Whatever others do, then, I do better if I do not buy the device (or if I catch as many fish as I can). Yet if we all reason this way and act accordingly, we are each worse off than if we cooperated. The examples here are more commonly thought of as “public goods” or “commons” problems, and the Switching Dilemma is, indeed, a kind of public good problem.

The situation is similar for avoiding the risks of HIV transmission. Suppose all of us refrain from demanding information about the HIV status of surgeons who will operate on us, accepting the cost of living with the fear that they may infect us. Then we will all be better off for several reasons. Resources better spent on infection control will not be diverted to testing and regulating and enforcing compliance from surgeons or other health care workers. (These costs can be public or private, as, for example, the costs of liability insurance and the restrictions on obtaining it without evidence of HIV status.) This means that our chances of actually catching HIV will be lower because better infection control barriers are our most effective protection against transmission in health care settings. Services provided by these surgeons and other health care workers will still be available to us and to everyone infected with HIV. Health care workers will be more willing to treat HIV-infected patients, if the risks they face in doing so are not further compounded by a program that penalizes them if they become infected. Of course, if others refrain from demanding information about HIV status, but I can get it and act on it, then I will do better. I will have the benefits just noted plus I will avoid the cost of my own fear of contagion. I would also be a fool to refrain from seeking the information if everyone else demands it and acts on it. In that case, I would not only have lost the benefits that derive from everyone refraining, but I would still have the cost of living with my fear if I did not switch. Whatever course others take, I do better by trying to discover my surgeon’s HIV status and switching if appropriate. However, if all of us reason and aim to improve our situations in this rational way, we will all be worse off. That is the Switching Dilemma.

Of course, my description of the situation rests on some robust empirical assumptions. I assume that we get better protection against HIV transmission by emphasizing infection controls than we do by isolating and switching from, or restricting the practice of, HIV-infected surgeons

and other health care workers. This assumption matches our policy in trying to protect health care workers from their higher risks of infection by patients; we refrain from the mandatory testing of patients and insist instead on universal precautions. I am also assuming that there is a significant benefit from having a health care system in which there is less fear of treating HIV patients. If physicians not only fear HIV transmission but the loss of their livelihood and practice during the period of HIV infection as well, they will be even more reluctant to treat HIV patients, or the poor and minority populations that increasingly contain such patients. I am assuming that the services provided by HIV-infected health care workers are of considerable value; some such workers concentrate their efforts on treating other HIV patients, providing services many are reluctant to offer.

I also assume that there are significant costs to enforcing a system of information gathering intended to identify infected health care workers. Even if the government does not make testing mandatory, liability insurers are likely to require evidence from hospitals or individuals that they are not HIV infected. If we manage to avoid the costs of mandatory testing, then we still have the costs of assuring compliance by health care workers, especially those who know they are infected. Recent articles suggest that such infected workers are unwilling to comply with the current CDC guidelines (Gross 1991; Rosenthal 1991a). A recent survey, carried out in the wake of the CDC announcement of new guidelines, found that HIV-infected health care workers are reluctant both to tell their employers or patients about their condition and to restrict their practice to nonrisky procedures; workers are also reluctant to have themselves tested or to seek treatment for fear that their status will put them at risk of losing their jobs (Rosenthal 1991b). If such noncompliance is widespread and people become aware of it, their fears of contagion may persist despite the measures they have put into place to detect infected providers. Moreover, the fact that professional groups have uniformly refused to provide lists of exposure-prone procedures (Coleman 1991), forcing the CDC (and the AMA) to revise their guidelines, suggests that there is considerable resistance to all monitoring of infected professions.

A further assumption is that when a system imposes restrictions on HIV-infected physicians or indirectly, through liability insurance, requires testing of physicians and other workers, it will produce a demand for mandatory testing of patients. Physicians are at greater risk of infection from patients than patients are from physicians and perceive it as



unfair that they are being asked to undergo testing and restrictions when patients are not. We may also see particular organizations of health care providers claiming that they can assure better patient safety through administering CDC-type guidelines than other providers, using the fear of transmission and their greater assurances of safety as a marketing device. For example, Kaiser Permanente has had a policy of keeping HIV-infected surgeons from performing invasive procedures, but it also has a policy of retaining the services of these physicians, reducing their incentive not to report their condition. They can then claim that their close monitoring of physician behavior makes their services safer than those provided by community hospitals. Although this might be a successful marketing strategy, it builds, rather than reduces, public fears of infection.

One final assumption in the Switching Dilemma is that the fear of contagion from professionals will persist. In fact, if people refrain from seeking information about the status of providers, shifting efforts instead to infection control, and if the benefits of this use of resource are better known, then over time the dread of HIV transmission will diminish. Moreover, the costs of reducing it when people refrain from switching behavior are borne by everyone, collectively. This allows us to describe a new situation, a Long-Term Switching Dilemma, that includes the benefits of reducing dread over time in the way just described. Individuals who then do not cooperate with others, in an effort to reduce their own short-term dread, will do better individually, but if all behave this way, they will lose the benefits both of cooperation and of dread reduction that derive from cooperation.

Strictly speaking, the Switching Dilemma involves individuals seeking information about their provider's HIV status and switching if it benefits them to do so. The AMA position that physicians have an obligation to know their status and to report to their patients if they are HIV positive involves activities that clearly set the stage for switching. In contrast, it might seem that the CDC guidelines escape the Switching Dilemma because they do not call for producing a body of information that individuals other than the infected health care workers themselves can act on. They do not call for mandatory testing, for example. Nevertheless, the CDC June guidelines are challenged by the Switching Dilemma, for, in effect, they assure that everyone switches. The CDC guidelines, which remove HIV-positive health care workers from certain invasive procedures, (paternalistically?) take the switching out of the

hands of individual patients, producing the effect of everyone switching without the embarrassment of providing information about infected providers. In effect, in response to the patient demand to know the HIV status of providers so that switching is possible, the guidelines assure that all switch, at least in the restricted cases where "exposure-prone" procedures are involved. The June CDC guidelines thus limit the scope of switching behavior (even more than the June AMA guidelines), containing the more widespread damage unrestricted switching would involve, but they also produce the damaging effect of everyone switching in those cases. The Switching Dilemma has implications for the CDC guidelines as well as for policies, like the AMA's, that leave switching to individuals. The CDC (1991c) and AMA (Leary 1991) revisions also do not escape the force of the Switching Dilemma, although they may reduce the scope of enforced switching behavior even further, depending on the discretion of local committees.

What follows from the fact that acting on our fears of contagion can lead to the Switching Dilemma? The dilemma tells us that we will each be worse off if we rely on and continue to respect individual autonomy in this situation. We can avoid the problem if we enforce some form of cooperation: the cost to each person will be that each will have to bear the costs of his or her dread (although it may diminish in the long run, with cooperation), but each will in fact have less to fear because cooperation will produce a better, safer health care system. Indeed, it will be one in which there is less chance of HIV transmission because infection control measures will be adhered to more scrupulously. The enforced cooperation would be equivalent in practice to respecting the rights of infected workers to continue practicing the procedures they are competent to perform.

The justification for ignoring individual preferences to know and to switch is not, however, the strong paternalism that seemed objectionable earlier. We are not saying that people do not know what is good for them and have to be protected against irrational acts. In fact, we are saying that people who act rationally when exercising their patient rights may worsen their situation because of the effects produced by everyone behaving that way. The problem is that individuals' rational behavior will undermine achievement of a common or public good. Specifically, if we grant full priority to patient rights and allow people to engage in switching behavior, we are each worse off because our system is not as safe or productive as it would be if we refrained from full exercise of our

patient rights. Because all can agree to the importance of the public good, we have good justification for restricting the range of choices open to us as individuals, for only by doing so can we achieve this collective benefit. Notice that this argument is more persuasive than a standard appeal to utilitarian considerations for limiting rights. Some of us are not being asked to accept limits on our rights so that others will gain advantages and aggregate welfare will be improved. Rather, each of us is better off if we accept the limits, for if we do not, we each lose the advantages of the public good.

This argument for restricting the exercise of patient rights does not constitute or depend on a general argument that the rights of health care workers must take precedence over the rights of patients. I earlier despaired of providing any such argument. Rather, the argument offered here is tied to very specific assumptions about the effects of everyone exercising their patient rights; change some of the mechanisms underlying these assumptions, and the argument does not work. We arrive at a justification for some policy options, but not because we have settled once and for all how the underlying rights should be ranked. Thus the opposition to the CDC guidelines that follows from this argument does not depend on saying, as some have argued (Barnes et al. 1990; Feldblum 1991), that, because the risks fail to meet the threshold of "significance," then we have no basis for limiting the rights of handicapped workers.

## Implications for Public Policy

The Switching Dilemma suggests that our policy options should concentrate on measures other than locating and restricting infected health care workers. Specifically, we should emphasize instead a robust battery of measures aimed at improving infection controls. These include (1) improving compliance with existing infection control measures, including private practice settings; and (2) investing in research and development to improve infection control measures. Of course, we should (3) encourage voluntary testing and treatment by practitioners who suspect they are at risk. This will be difficult, however, unless we (4) resist efforts to impose restrictive measures in order to manage liability; in turn, that requires (5) strong leadership to reduce the public perception that transmission risks are great. Finally, because the Switching Dilemma is

premised on the probabilities of transmission being quite low, we must (6) continue to monitor HIV (and HBV) transmission in health care settings.

It is worth noting the ways in which even the recent revisions of the CDC and AMA guidelines fall short of these policy proposals. By calling for case-by-case consideration, rather than claiming that all infected workers impose unacceptable risks when performing certain invasive procedures, the revisions more closely conform to the ADA requirements for risk assessment. Nevertheless, the revisions still single out all infected health care workers who perform certain invasive procedures as potential risks requiring special scrutiny. Interpreted most narrowly, the CDC revisions ask local committees to restrict only those infected professionals who are so impaired that they can no longer perform certain invasive procedures without elevated risks of accidents or deviations from universal infection controls. This is not as innocuous as it seems. Why should only HIV-infected professionals be monitored? Anyone who is that impaired, for whatever reason, should be restricted. Thus the guideline revisions still focus attention on infected professionals rather than on improving infection control procedures across the board. They still encourage liability insurers to require assurance that the guidelines are being met. They do not prevent major problems of compliance by HIV-infected professionals. Furthermore, they fail to elicit strong leadership aimed at dispelling public fear. The revisions promote scapegoating rather than providing a catalyst for the steps necessary to make the system as safe as it should be.

We should not be under any illusions about the risks involved in the policies I have recommended here. If the assumptions behind my argument are correct, there will be fewer such cases of HIV transmission by HCWs if we emphasize infection control than if we try to eliminate the "threatening" infected professional. It will be difficult, however, to show that we have fewer cases: each incident risks being another "signal accident" like the Acer case. It will take careful public education, including education of media professionals, to put the cases that do appear in proper perspective. Nevertheless, the alternative is worse: the AMA or CDC guidelines, even as revised, because they deflect full attention from infection controls, will give us more, not fewer, cases that can serve as signal accidents, greatly inflating public fears. The Switching Dilemma suggests that more restrictive policies may tend to inten-

sify rather than diminish public dread. They will then push us to more drastic measures even more likely to be collectively self-defeating.

Whether or not Dr. Rzepkowski's rights are clearly violated by current policies, each of us will be worse off if we adopt policies that restrict his rights under current conditions. We thus have good reason not to adopt the restrictive measures that led to his firing.

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