ANNALS OF MEDICINE

# INDIA'S PLAGUE

*Cheaper drugs may help millions who have AIDS—but how many will they help?*

BY MICHAEL SPECTER

Late on an autumn afternoon a little more than a year ago, a nattily dressed chemist named Yusuf K. Hamied strolled into a conference room at the headquarters of the European Commission, in Brussels. He carried in his briefcase a simple proposition, and, in delivering it to the politicians, health ministers, and international pharmaceutical executives who were gathered there, he dispensed with the pleasantries and dry language so common in conversations about regulation, drug pricing, and global-tariff regimes. "Friends," he began, although he was fairly sure he had none in the room, "I represent the needs and aspirations of the Third World. I represent the capabilities of the Third World, and above all I represent an opportunity." It was time, he said, for the people who control the earth's resources and its capital to face up to their "responsibility to alleviate the suffering of millions of our fellow-men who are afflicted with H.I.V. and AIDS."

Speeches like this one have become standard in the era of globalization. But Yusuf Hamied is not the average do-gooder campaigning for a more equitable world. He is one of India's most successful businessmen. He lives in (among other places) Windsor Villa, the Bombay home where Salman Rushdie was raised, and he earned a Ph.D. from Cambridge at the age of twenty-three. His father, who was also a chemist, and who helped start India's first national university, at Mahatma Gandhi's request, became rich by importing a popular sexual tonic from Germany. In 1935, he used the profits to start Cipla, the giant pharmaceutical house that the younger Hamied now runs.

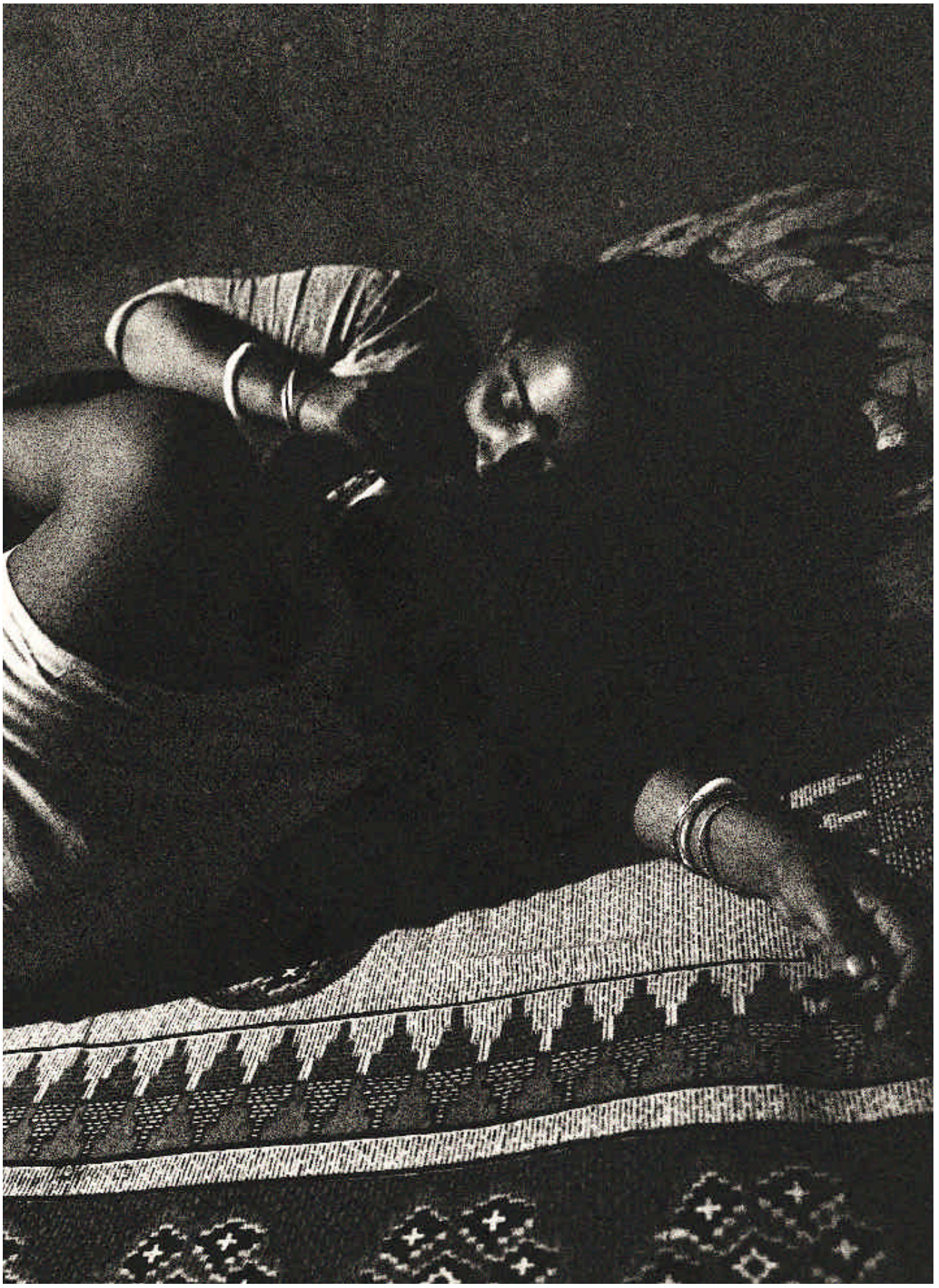
Yusuf Hamied wasn't in Brussels to talk about money. He was there because he was scared. Over the past few years, he had become convinced that his country was edging into an AIDS apocalypse every bit as severe as the one that has engulfed Africa. With the possible exception of South Africa, there is no country on earth where more people are infected with the AIDS virus than India. By last fall, Bombay, where Cipla has its headquarters, was competing for the dismal honorific of AIDS capital of the world, with more than two hundred and fifty thousand H.I.V.-positive inhabitants.

Hamied laid down a challenge for the officials he addressed that day: start selling drugs at prices that the poor can afford or I will do it for you. It wasn't an empty threat. The Indian government long ago decided that only the *process* used in making a drug could be patented; the final product itself could be copied freely. In the West, Cipla is regarded, with not a little bit of rancor, as one of the great pirate enterprises of the corporate world—a company that flaunts international convention, routinely copies the molecular formulas of new drugs, and then sells for pennies in India what would cost a hundred times as much in Europe or America.

Hamied ended his speech in Brussels by reading a list of drugs that his company makes and the low prices he now intended to charge for them. Soon after returning home, he offered to donate supplies of a drug called nevirapine to the Indian government; when it is taken at the beginning of labor, nevirapine has proved to be remarkably effective at preventing the AIDS virus from being passed from mother to child. The government declined. In December, Hamied made his offer again—to the Prime Minister personally. This time, he heard nothing.

Then, on the morning of January 26, 2001—India's Republic Day—the state of Gujarat was struck by the most devastating earthquake in the country's history; at least thirty thousand people died, and seven hundred

*A prostitute and her customer in Calcutta. The*



*nt workers who come to the big cities are at high risk for HIV and more likely to spread it. Photograph by Zana Briski.*

thousand were left homeless. "Somehow, that just really woke me up," Hamied told me when we met in New York this summer, in his suite at the Palace Hotel. It was a muggy day, and from his lounge on the forty-seventh floor we watched as storm clouds danced around the building. "I sent medicine, and I was happy to do it," he went on. "But afterward I sat down with my top managers and I said, 'Look at what the hell is happening in our country. AIDS is the worst tragedy this country could ever experience—with the possible exception of a nuclear war—and it is a completely foreseen tragedy. Why are we all donating for Gujarat and doing nothing about this great plague?' I decided right then that, if I had to, I would do it by myself. People think this is all about Africa, but it's not. For me, it's about my own home."

So Hamied went out and started a revolution. Thanks to Cipla, a year's worth of crucial AIDS medication that until recently sold in America for more than fifteen thousand dollars is now available in many parts of the Third World for three hundred and fifty dollars. Multinational pharmaceutical giants condemned Hamied. "Stealing ideas is not how one provides good health care," Shannon Herzfeld, a spokeswoman for the American pharmaceutical industry, said last year.

Yet the big companies have also realized that clinging to patent laws during an international plague is bad for business, and the impact of Cipla's decision has been extraordinary. Entire countries have shifted the focus of their public-health systems—simply because AIDS treatment suddenly seems affordable. Led by Secretary-General Kofi Annan, the United Nations this past summer held its first General Assembly meeting devoted solely to a disease. Soon afterward, the heads of the Group of Eight leading industrial nations met in Genoa and committed themselves to spending twelve billion dollars on AIDS, as protesters rioted in the ancient streets around them. This spring, a group of well-known Harvard professors released a lengthy document in which they, too, argued that it is no longer morally permissible for the West to deny patients in the world's poorest countries AIDS drugs that could prolong their lives. From Africa to Brazil, Hamied and his crusade for access to these drugs have been embraced as a symbol of hope by activists who believe they are engaged in a global war against apartheid in health care.

The clamor has been so intense that few public-health officials have dared to say publicly what many believe: that it makes far more sense to try to prevent H.I.V. than to focus on treating it. The reasons are obvious: prevention averts the sickness and death that AIDS inevitably causes; many AIDS drugs are not only expensive but complicated, toxic, and difficult to take correctly. In addition, in countries like India—where per-capita spending on health care is about ten dollars a year, and where the government is committed to using public funds to finance it—placing emphasis on any costly treatment is hard to justify when scores of health problems that could be cured cheaply and easily are so common. Last year in India, there were more than 1.1 million reported cases of malaria; filaria, a parasitic nematode, which blocks the lymphatic system and causes serious swelling, is epidemic; Japanese encephalitis, which is spread by the Culex mosquito, is endemic and kills many children; yaws, a contagious, disfiguring infection, has been prevalent in India for years and is easily cured with a single shot of penicillin. Each year, there are two million new cases of tuberculosis; more than a thousand people die from it every day. India also accounts for seventy per cent of the world's leprosy. Statistics like these tend to make Indians weary—and unwilling to listen when they are told that the latest disease to afflict them is the most dangerous.

"In America, there is an endless discourse about risk: which kids are at risk, what are the health risks, how do we guard against them?" says Mark Koops-Elson, an anthropologist at the University of Chicago who is writing his dissertation on India's cultural and financial attitudes toward risk and health. "Which diseases are worse than others? There is no such conversation in India. Given the vastness of the problems that people in India face and the poverty that exists, most people just say our responsibil-

*"Your Honor, may I point out to the court that my client pleaded guilty to wrongdoing but not evildoing."*

ities lie with those who are closest to us. Trying to fix the entire society is too overwhelming."

II

I flew into New Delhi at the beginning of June, almost twenty years to the day after the Centers for Disease Control, in Atlanta, published the first words about what would become the AIDS pandemic—an account of five unexplained cases of *Pneumocystis carinii* pneumonia among gay men in Los Angeles. Since then, twenty-two million people have died and forty million live with the infection, most of them too poor to receive even rudimentary palliative care. In its early years, AIDS was an absolute and fairly rapid death sentence. In 1986, however, hope for a prolonged life emerged when the drug AZT, or zidovudine, was shown to delay the degenerative effects that the virus has on the immune system. AZT was the first of a new class of antiretroviral drugs that work by suppressing the ability of H.I.V. to reproduce. This helps maintain the integrity of the immune system and postpones the development of opportunistic infections, which are often the cause of death in people afflicted with AIDS. Among Americans today, the prevailing view is that the AIDS epidemic has begun to wane. That is not true. Each day brings at least sixteen thousand new infections throughout the world. As many as one-quarter of them are in India alone.

The first cases of AIDS in India were not reported until 1986, in Bombay and in the southern industrial city of Madras, and until then there had been every hope that the nation would avoid the devastation that has occurred in countries like Zimbabwe and Botswana, where at least a quarter of the adult population is now infected with H.I.V. After all, it was said, the Indian family is remarkably close and sustaining. Surveys often show that Indian men, once they are married, are more likely to remain faithful than men from many other cultures; furthermore, half of Indian women marry by the age of eighteen, and more than ninety per cent are still virgins when they do. In much of Africa, on the other hand, there is little stigma attached to sexual promiscuity, and the incidence of venereal disease—which is a reliable barometer for the presence of H.I.V.—has always been high. In addition, despite the fact that half a billion people in India live on less than a dollar a day, millions of others are members of a rapidly growing middle class. The streets of Delhi, Madras, and Bombay are not simply overrun with beggars; they are also filled with motorcycles, schoolchildren in crisp blue uniforms, and eager businessmen toting laptops and riding to work in motorized rickshaws.

*"Cut a few thousand jobs here, toss a few thousand jobs there, and they start to add up"*

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But prosperity itself—the new mobility, rising income levels, and the excellent system of national highways—has played a role in exacerbating the crisis. During the past twenty years, India has become one of the great migration centers of the world, and migrant populations are at a higher risk for AIDS. They are also more likely to spread the disease. There are at least a hundred thousand long-haul truckers shuttling back and forth across the subcontinent, more than two million prostitutes, two hundred and seventy-five thousand brothels, and tens of millions of seasonal workers who come to the big cities for a few months each year. AIDS travels along the truck routes as efficiently as white blood cells do along the arteries of the human body—and one can trace the evolution of the epidemic with eerie accuracy simply by comparing traffic patterns moving out of major cities with the rates of infection of people who live along the way. In parts of Nepal, H.I.V. is called Mumbai disease (Mumbai is the Hindi name for Bombay), because the people who contracted it uniformly went to work in the great city and came home sick. And, because there is a lag of many years between infection and any visible sign of illness, the epidemic can grow unnoticed until it is simply too large to control.

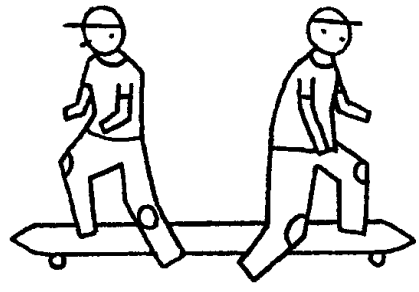
Not long after I arrived in Delhi, I stopped by the office of Swarup Sarkar, who is the head of the United Nations AIDS program for South Asia. Sarkar had just returned from a brief visit to Bangladesh, where the epidemic is spreading slowly, and he was planning a trip to the Burmese border, where it is much worse. He gave me a cup of tea and we sat down in front of his computer with a CD full of data, some colorful maps, and a few very disturbing suggestions about the future health of his country. On charts tracing the course of the epidemic as it moved through India, the country was shown in different colors, depending upon the prevalence of infection. A child would have

been able to follow the coded patterns: the earliest map, from 1986, was mostly pale, indicating low levels of contagion; by 1990, a bright yellow had begun to appear in abundance. That color represented high-risk groups—gay men, sex workers, drug users—at least five per cent of whom had been infected. The numbers have been inching upward for years, but studies have shown that once the rate of infection among women who are tested in birth clinics rises above one per cent, it becomes nearly impossible to keep an epidemic like H.I.V. from seeping into the rest of the population. That is what is now happening in many parts of India. Red represents pockets of infection that have grown beyond that one-per-cent figure. The maps that Sarkar showed me from 1986 to 1990 had no red in them; by last year, much of the country, from Manipur, in the northeast, to Kerala, at the southern tip of the continent, was awash in crimson.

The course of the epidemic in India closely resembles the early pattern in Thailand, where infection spread almost exclusively among heterosexuals. Yet the differences in official policy couldn't be greater. In the mid-nineteen-eighties, H.I.V. hit Thailand with force, and within a few years the government had prepared an aggressive campaign of information targeted directly at the people who were most at risk, preventing hundreds of thousands of new infections. But such success costs money, and requires commitment. Thailand spends more than sixty cents per person on H.I.V., whereas India spends a little less than six cents, or sixty million dollars a year—in other words, only twice what Thailand spends, although India's population is sixteen times as large. From the king to local village leaders, Thai officials have made many public statements about the dangers of H.I.V. and about how the disease is spread. In India, in part because of a national reluctance to speak publicly about sex, nothing like this has happened. No movie stars appear at fund-raisers, no prominent politicians admit to being gay. No mayor would visit a hospice. India desperately needs a Rock Hudson or a Magic Johnson. "We had very few cases for years," Sarkar said. "It was possible to do something, and all we did was watch." In the nine years between the first cases of AIDS in the United States and the real beginnings of the epidemic in India, fictions and theories evolved to suggest that Indians were immune to H.I.V., that they had protective genes and simply couldn't get sick in the same way that Africans or Europeans did. By 1994, however, it had become clear that such conjecture was nonsense. Meanwhile, the maps kept getting darker.

Sarkar, who is forty-eight, looks like a middleweight wrestler. His principal job is to help the United Nations formulate and carry out its AIDS policies; but, like virtually all countries that have been seriously affected by AIDS, India has consistently sought to minimize the extent of its problem. Not long ago, Prasada Rao, who runs India's National AIDS Control Organization, complained publicly that the estimate of four million H.I.V.-infected Indians, which is frequently used by the United Nations and the World Bank—a figure that most experts consider very conservative—was "too high and not based on any sound epidemiological evidence." No public-health official with experience in India believes that, and most think Rao himself knows better. When I first met Rao, I asked him the question that has so alarmed AIDS experts throughout the world: Did he think India would become another Africa? "I was afraid for a year or two when I began my job," he said. "But I no longer have that fear. We are aware of the problems, and we are working hard to address them. I think it's clear that we have begun to succeed."

When I told Swarup Sarkar about my conversation with Rao, he simply shook his head in sorrowful acceptance. "We have told ourselves so many lies," Sarkar said. "The government says offi-



## THE KISS

The mossy transom light, odors of cabbage
and ancient papers, while Father Feeney
polishes an apple on his tunic.
I tell him I want the life priests have,
not how the night sky's millions
of departing stars, erased by city lights,
terrify me toward God. That some nights
I sleepwalk, curl inside the bathtub,
and bang awake from a dream of walking through
a night where candle beams crisscross
the sky, a movie première somewhere.
Where am I, Father, when I visit a life
inside or outside the one I'm in?
In our wronged world I see things
accidentally good: fishy shadows thrown
by walnut leaves, summer hammerheads
whomping fireplugs, fall air that tastes
like spring water, oranges, and iron.

"What are you running from, my dear,
at morning Mass five times a week?"
He comes around the desk, its failing flowers
and Iwo Jima inkwell, holding his breviary,
its bee's hum mysteries in a Latin
whose patterned noise, like blades
on ice, became a cranky poetry

I was lost to. Beautiful dreamer,
how I love you. When he leans down,
his hands rough with chalk dust
rasp my ears. "You don't have the call,"
kissing my cheek. "Find something else."

On the subway home I found
a Golgotha air of piss and smoke,
sleepy workers, Cuban missiles drooping
in their evening papers, and black people
hosed down by cops or stretched by dogs.
What was I running from? Deity flashed
on the razor a boy beside me wagged
and stroked the hair of the nurse who waked
to kiss her rosary. I believed the wall's
filthy cracks,coming into focus
when we stopped, held stories I'd find
and tell. What are you running from,
child of what I've become?
Tell what you know now
of dreadful freshness and want,
our stunned world peopled
by shadows solidly flesh,
a silted fountain of prayer
rising in our throat.

*—W. S. Di Piero*

cially that there are 'only' four million infected Indians." He repeated the words. "*Only four million*Possibly they are correct. But every time we have said the epidemic was limited, or not spreading as fast as in other places, we have been proved wrong. What is scary is that we don't have any reason to say that we are seeing numbers that have reached a plateau. It would be very surprising to think that the AIDS epidemic has stabilized in India,where at least seventy-five per cent of the population gets no education. No intervention. Nothing. Whether it will suddenly have another jump"—as the epidemic did in many places in Africa—"we simply cannot say."

III

Late one steamy night in the middle of June, I drove to the Pukkenthrui truck stop, which is about an hour out of Madras and just five miles from the spot on National Highway 47 where, in 1991, Rajiv Gandhi was killed by a suicide bomber. The monsoons were about to begin, and the ripe, heavy smell of tamarind rolled across the humid roadway. My guide was Nobin Jos, a thoughtful young man who runs the Trucker-Highway Community Health Project, an AIDS-education program that has such limited resources that the drivers use sawed-off logs by the road for seats during meetings. Steady traffic pounded the battered highway as we passed the city's broad, festering slums. Most Indian cities, because they are extremely congested,don't permit big trucks to enter during the day, so truckers move at night. It was a moonless evening, and as we started to pick up speed I saw a string of women standing by the side of the road,slowly waving red flashlights at the cars driving by. Eighteen-wheelers lined the shoulder.

"They are lonely and ignorant men, but they are desperate for work," Jos told me after we arrived at the truck stop and stood watching his colleagues give a brief lecture on AIDS to the assembled drivers. (There were demonstrations with a wooden penis on how to use a condom, which was cause for great merriment among the startled drivers.) When they are available, a package of three condoms costs less than one rupee (about two cents), but not many men see the point of spending the money. None of the drivers spoke English. But Jos, acting as an interpreter, helped me talk with a few. We sat at a roadside restaurant, next to a military hotel, where flatbread baked in a kiln and we were served a dark, chalky tea in plastic jugs. The men wore turbans, N.B.A. T-shirts, and towels around their waists. Some were toothless, others were barefoot, and all of them were eager to chat. I was surprised by how few had heard of AIDS. None had any basic understanding of the epidemiology of the disease. "I only have sex once a week on the road," a man from north of Bombay told me. Then he added, I think for what he assumed would be my approval, "And I always take a bath with lime water afterward."

During nearly a month spent travelling through cities and towns with a combined population far larger than that of France, I noticed only two posters advertising condoms. One ad on a billboard in Madras, which featured an alluring woman, said simply, "Look before you sleep." (I had no idea that this was an AIDS advertisement until I was told. It could just as easily have been about buying a decent mattress.) The only Indian television commercials that talk about H.I.V.—in Hindi and in English—were paid for by Cipla, not by the government;they are extremely well produced, but they dwell on the fact that new treatments make AIDS a disease that people can finally combat. Explicit messages about how one becomes infected are almost completely absent. Abstinence is neither preached nor practiced. India has a rich sexual history, but outside its biggest cities it remains deeply conservative, and public discourse about sexual conduct is limited.

While I was in Delhi, my driver was a sweet, middle-aged man from a northern hill town. Like tens of thousands of other such men, he returns to his village to see his wife and children no more than three or four times each year. I never had the nerve to ask him what he did about sex the rest of the time. Statistically, at least, the answer is clear: one study of seven hundred Tamil truck

drivers showed that the percentage of those infected with H.I.V. rose from 1.5 per cent in 1995 to more than six per cent just two years later. By last year, more than twenty per cent of the drivers were infected—a figure with ominous echoes of the early epidemic in Africa, where AIDS made the inevitable leap from groups like truck drivers and prostitutes into the wider population. Many experts find it hard to believe that India can avoid a similar fate. "Even the most conservative government estimates predict that in seven years there will be at least ten million people infected with H.I.V. here," Subhash Hira told me. He is the director of the AIDS unit at the noble, decrepit Sir J. J. Hospital, in Bombay, and a professor of infectious diseases at the University of Texas's medical school, in Houston. "This is a heterosexual epidemic with the potential to destroy this society and decimate our economy. And nobody seems to be terribly concerned."

Perhaps because the epidemic first appeared in Madras and Bombay, those cities have made the best efforts to deal with it. One morning, Suniti Solomon collected me at my hotel and drove me to her bright, tidy clinic on Raman Street in Madras. She is a short, soft-spoken woman, who treated the first AIDS cases in India and has probably seen more patients than any other infectious-disease specialist in the country. I spent most of the morning with her, first talking about AIDS and then sitting in on a counselling session. A barefoot woman with eyes the color of coal, hair coiled to her waist, and rings on nearly every toe crept into the office. She was thirty but looked younger. The woman had been selected randomly to participate in a health survey using residents from thirty of the nine hundred and forty-five slums in Madras. In exchange for answering a series of questions about her health and giving blood for research, she would receive free care (paid for by the National Institute of Mental Health, in the United States, which sponsored the studies). The woman's anxiety was obvious. She lived in a slum near the beach that borders the Bay of Bengal. She had been feeling weak and dizzy, and had been unable to make it through her usual eighteen-hour day. "My husband pulls a rickshaw," she told Solomon, an almost preternaturally reassuring woman. "He does not want me to be at this clinic." She said that he had been treated before for sexually transmitted diseases, and had recently become quite ill.

"Do you know whether he has H.I.V.?" Solomon asked.

"What is that?" the woman replied blankly, staring at the wall clock, afraid of what would happen if her husband got home before she did. After she left, the doctor explained that the woman was in a "love marriage"—which among slum dwellers in southern India is still not common. It suggests a certain independence on the woman's part; if the marriage had been arranged, she would probably never have had the resolve to come. "We will know in a day if she is infected," Solomon told me. "But it will be hard to persuade her husband to come in to be tested or to permit her to be treated—even though it will cost him nothing." Doctors have to deal with this problem every day, in every city. Of all the obstacles that physicians and AIDS agencies face in India, nothing is as discouraging as the plight of women. New brides are usually illiterate and are exposed to AIDS by the most highly valued factor in Indian culture: monogamous marriage. "Ninety per cent of my women who are H.I.V.-positive have a single partner, and that is their husband," one of Solomon's colleagues, at another hospital in Madras, told me. "I always say to them, 'Don't match your horoscopes for marriage. Please match your blood tests.' But it's hard to enforce. Imagine a girl's parents asking a boy's parents for a blood statement. Not in India; that will never happen."

In many parts of the country, a woman is regarded as a relatively valuable farm animal; her health matters only because she is required to raise children and keep house. "No husband would allow a wife to go alone for an examination outside the immediate slum," the sociologist Radhikha Ramasubban told me. "A woman has to have another woman, an older person, or a man act as an escort." Ramasubban has been studying the health of women in the slums of Bombay for years. "Nobody is willing to free them from household duties, child-minding duties. And what is that one visit going to do? Even if you can get them to go, they won't make the follow-up. And then the test, and the confirmation for the test. And going back for consultation. With tuberculosis, social workers used to go to their houses to find out if they had taken their medicines. With H.I.V., the treatment is far more complicated, and it must go on for life. Who is going to attempt that here? It's such a hopeless task."

## IV

It is only after spending some time in India's government hospitals that one can fully understand that the debate about access to the most advanced AIDS therapy, though good-hearted, is beside the point. The hospitals are depressing because they are filled with dedicated, well-trained doctors who don't have enough money to do their jobs properly. At several facilities that I visited, needles are routinely bleached and used more than once, medical instruments are sterilized in giant soup pots, and patients had better hope that a family member or friend will bring them food if they want to eat. At the Hospital of Thoracic Medicine, just south of Madras, a former tuberculosis clinic that has become a vast government holding pen for hundreds of people infected with H.I.V., antiretroviral drugs are not offered or discussed; neither is aspirin. The patients are treated with as much compassion as an overburdened staff can muster, and that's about it. As one nurse explained to me, "In America, you may do an MRI scan every time somebody has a headache. We can't even take X-rays when somebody breaks a bone."

Suniti Solomon's Y.R.G. center, in Madras, presents a different and more complex picture. Y.R.G. is the biggest AIDS clinic in southern India, and it is probably the best one in the country. So far, eleven thousand patients have passed through it (not all of them H.I.V.-positive). With the help of foreign aid money and many donated drugs (from Cipla and other companies) and grants for research, patients receive counselling, testing, nutritional guidance, and what palliative care there is to offer. Doctors treat the many infections that H.I.V. can cause; they also explain the more fundamental powers of antiretroviral drugs, which are often available to those who can afford to pay up to two thousand dollars a year. Only about one patient in ten attempts to use the medicine.

In the past five years, the treatment for AIDS has had to become more complex in order to match the sophistication of the virus, which quickly learns to evade the effects of a single drug. Standard care has moved far from the days when AZT was the drug of choice; each patient must now take an assortment of medicines, which work together to suppress the virus. The therapeutic cocktail is called HAART (highly active antiretroviral therapy), and a patient has to take at least three drugs a day; it also requires constant monitoring and medical attention. The treatment can dramatically improve an infected person's prospects for a healthy future, but it must be fine-tuned frequently and taken for life. For many of Solomon's patients, it is simply not an option.

Y.R.G also has a ward at a local hospital. The day I was there, the staff was struggling to deal with a long line of emaciated people waiting for help. N. Kumarasamy, who works with Suniti Solomon, keeps his medicines in metal gym lockers in the hallway—they serve as his pharmacy. In order to provide AIDS drugs, he takes whatever he can get; the occasional grant from a pharmaceutical firm or a few dozen doses of AZT brought back by a friend from an international conference. Kumarasamy was educated at Johns Hopkins, among other places, and when Solomon asked him to direct the health-care clinic he agreed without hesitation. "Lots of our patients come from other, pretty good clinics," he told me. "Doctors see them as a liability and a waste of time. They are going to die, it's an expensive disease to treat, so why bother? You have no idea how many famous people fly from Delhi so that they don't have to be treated in their own town. The first thing they ask is 'Do you recognize me?' We always say no."

The clinic—a former leprosy center that had been abandoned—is open and warm, but, even here, the stigma that surrounds AIDS in India remains. If you ask for Y.R.G. at the hospital reception desk, the clerk will look at you differently than if you were to ask for any other ward. This is typical. In Delhi, I had spent a morning in a leafy suburb at an AIDS group home owned by a prominent politician. It was lovely—light and filled with children, mothers, and the smell of curry coming from the communal kitchen. The man who owns the house has no idea that it is used as an AIDS-care center. If he did know, he would undoubtedly evict the group at once. Still, there is plenty of suspicion about the house in the neighborhood. No laundry man will go there, nor will fruit venders or trash collectors. Children steer clear of it. "They all look away when we walk down the street," one H.I.V.-infected mother told me when I visited. "Nobody will even look at our faces."

The stigma of the disease makes it hard for doctors and aid workers to do their jobs, but the obstacles that confront the patients themselves seem almost Biblical in their severity. "One day, this man came to see me," Solomon told me. "A nice man, caring. He is a landlord and owns acres and acres. His only son is positive. Of course, people came to him and sought to arrange a marriage, and he kept telling everyone, 'No, no, my son has to study and isn't ready for marriage.' And finally his own sister brought her daughter, which in south India is very common. She said, 'You can't do that, my brother, you have to marry your son to my daughter. It's only right.' So he told her the truth: 'My son has H.I.V., and I don't want your daughter to get sick.' He saw the change in his sister's face, and she walked away without a word. His wife, who had been hiding behind the door, heard what he said, and she told their son. The mother and child dressed in their best clothes and went out and bought poison powder in bulk. They drank it together and got into the car. Then the son drove as fast as he could into a big tree and killed them both. After that, the father came to me—his life was ruined. He said, 'All I have done is try to save my niece from getting H.I.V., and now I have lost everything.'

"It was a very, very hard moment for me. I just left the office and went home. I have a dog, and I tell him things I would never say to a human being. So through my tears I told him all about the man who tried to save his niece."

For Solomon and her staff, the stress is almost unbearable. She spends half her day fighting denial; the rest of the time, she must explain to her patients why drugs so commonly available in other countries remain too expensive for them. It is a difficult and often contradictory task: she knows as well as anyone that while drug treatment won't solve India's AIDS problems, it could help focus more attention on the implications of the epidemic. Indeed, one of the strongest arguments for providing expensive treatment to poor countries is that without it people will have no reason to learn if they are infected and no reason to change their behavior. But a simpler and cheaper approach would save more lives.

"I hear these people in the West talk-


*"You're incredibly tight."*

ing about what we should have all the time," Solomon said. "For us, it's not about patents and pharmaceutical giants and money. It's about our poverty, which is profound. If I were offered drugs or food, I would take the food, because I know it will give my patients a better quality of life. I would do that even if the drugs cost nothing. You have to distribute drugs, and they need to be used by the right date. You have to take eight glasses of water a day with some of them. You have to store some of them in a refrigerator. Nobody has a refrigerator here. On top of all this, there will be resistance developing to the drugs. People will take them as long as they can afford them, then they will stop."

Resistance develops when patients fail to complete the full course of treatment, and that can cause more harm than not taking a drug at all. (It is for this reason that tuberculosis has returned to such deadly prominence throughout the world.) Resistance makes it possible for any virus to gain resilience and power. "Look at penicillin," Solomon said. "In 1949, if you took one hundred strains of staph, penicillin killed them all. Every one. Today, if you take the same one hundred strains, ninety-nine of them will survive because of indiscriminate use. You think that won't happen with H.I.V.?" In fact, in America it is already happening. One recent study, based in San Francisco—which has some of the world's most sophisticated medical facilities, experienced AIDS doctors, and motivated patients—predicts that by 2005 nearly half of all H.I.V. patients in the city will fail to respond to the drugs they currently use to treat the disease. When resistant strains of H.I.V. are passed on to others, the people who have been infected have a much harder time from the start and are less likely to respond to conventional treatment. "People will become resistant, and the disease will redouble its power," Solomon continued. "All the while, people will be getting the message that there is a cure, and they will carry on having sex without condoms. Drugs used the wrong way kill people—and they are used the wrong way all the time. We have to get more training. Food. Clean water. Give us condoms, for God's sake. Teach women to read. But keep your drugs. They really won't help us now."

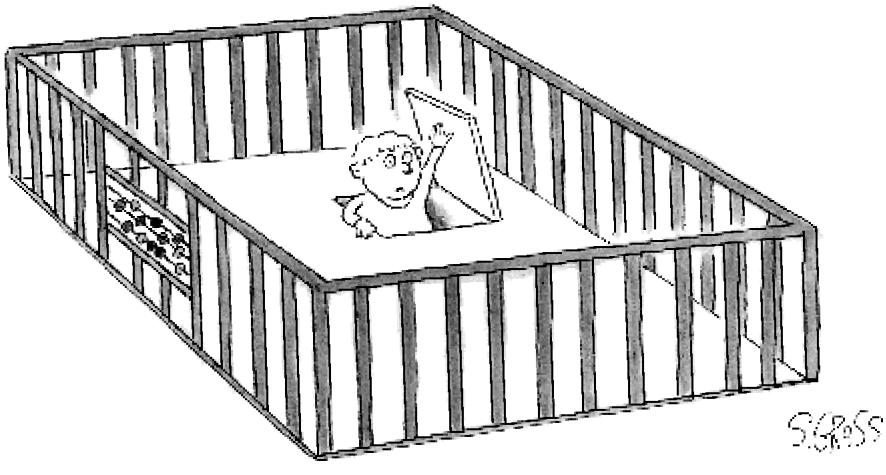
V

The most important question about Yusuf Hamied's personal revolution has also been the most difficult to confront: Is the movement for affordable AIDS treatment, which Cipla almost accidentally came to represent, actually pulling attention and money away from the vaccines and preventive strategies that in India are most likely to save millions of lives? More than five times as much money is spent treating sick people as is spent keeping them healthy in the first place. And much of that money is spent on people who are on the verge of death. Can that be fair? One reason the debate between prevention and treatment has always been so difficult is that sick people are easily identified, they have names, and their suffering can be acute. Who would want to ignore such pain? Money spent on prevention, on the other hand, is often used to protect people we don't even know. The public is vast and vulnerable, but it does not have a face or a name. (This is one of the reasons that AIDS-prevention efforts are so often weak. In the United States, for example, several hundred million dollars in federal funds is dedicated each year to prevention and education programs, whereas seven billion dollars annually is allocated for AIDS treatment.)

One is not supposed to make calculations like these, because they explicitly attach a cost to a human life; such thinking is considered callous and particularly unfair in an age of global wealth beyond measure. Nevertheless, we attach costs to human lives every day; in the United States, we know that lowering the speed limit by ten miles an hour would save thousands of lives each year, yet, as a society, we feel it's worth that price to travel that much faster; we also know that alcohol and tobacco are responsible for much sickness and death. We don't ban them, because we are willing to pay the price for the pleasure they provide.

AIDS activists insist that the potential devastation of the illness is so great that we cannot afford to make a choice between preventing the disease and treating the sick; whatever the cost, we must do both. But an essential question is often left unasked: What approach would help people in the poorest countries most? The Harvard economist Jeffrey Sachs has argued, for example, that if Americans contributed three billion dollars a year to combat AIDS in Africa, it would solve many problems and amount to only "about $10 a year for every American, the cost of a movie ticket with popcorn."

But would it? The idea that a small sacrifice from wealthy Western countries can alleviate much misery in places like Africa and India is comforting, of course, and it has become a first principle for the world's many health politicians. "These distinctions between preventing AIDS and treating it are criminal," Siddharth Dube, who has consulted for U.N.A.I.D.S. and the World Health Organization, told me. Dube was raised in Calcutta and has frequently written about AIDS and the health problems of India. "We are not living in the medieval ages, where a continent can be wiped out by the plague and nobody knows about it anywhere else. That we can know all this and yet do nothing is the most remarkable fact of our time. . . . AIDS is not watches or jewelry or software. Peo-



ple are dying. There are drugs, there is unimaginable wealth in this world, and the people who have the money are refusing to help. It's that simple."

Nothing about AIDS is simple, though. Providing treatment for even a minority of sick people comes at the expense of preventing many others from falling ill. It is true that many countries now permit local pharmaceutical firms to ignore patents and make some medicines more cheaply. But discussing any price reductions of these drugs is meaningless in countries like India, where poverty is so acute that the government can't afford them. When I was in Delhi, for example, Indian officials were debating whether to add the hepatitis-B vaccine to their program for children—because it costs sixty-five cents a shot, and not ten cents, like other vaccines. How can you argue about whether it's worth spending fifty-five cents to save a life and then begin to talk about spending immense sums on an extremely complicated treatment for a disease that cannot be cured?

The reality that the spread of AIDS could be greatly reduced through governmental effort has been routinely ignored by politicians in nearly every country. To focus on AIDS is to acknowledge the potential devastation the epidemic can cause, and politicians have rarely done that. What elected leader would wish to associate himself with a national calamity, particularly if it occurred on his watch or could largely have been avoided? This was as true in the United States in the nineteen-eighties and in Kenya and Zimbabwe in the nineteen-nineties as it is in India, China, or Cambodia today. "At all stages of the AIDS epidemic, politicians find reasons not to invest in prevention," Martha Ainsworth, a World Bank economist, told me. Ainsworth, along with her colleague Mead Over, wrote "Confronting AIDS," the best book on making economic decisions about handling the epidemic. "At the beginning, you take countries like India or Russia, and nobody is really sick. They have tens of thousands dying of tuberculosis every year. Nobody wants to spend scarce resources on AIDS, because it takes years to go from infection to illness. And then you get later into the epidemic"—when millions of people can be visibly, disturbingly sick—"and everyone is demanding treatment. It is much less controversial to treat somebody who is sick than to talk about homosexuality, drug abusers, prostitution, sexual habits, or social mores.

*"Oh! Homework."*

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"In parts of the world today, millions of people need treatment," Ainsworth continued. "When you then say, 'We are going to protect you by making sure that prostitutes and their clients use condoms and that drug users have clean needles,' people say, 'Don't spend money on them. They cause the problem.'"

Yet the effect of focussing prevention efforts on high-risk groups like prostitutes and truck drivers cannot be disputed. It costs three hundred rupees to avert one trucker's infection in India with targeted education programs and the distribution of condoms. That is about six dollars. For sex workers, the cost is less than three dollars. No treatment approach makes as much sense. Not long ago, Andrew Natsios, the Bush Administration's chief of U.S.A.I.D., said that it wouldn't pay to buy a complicated set of antiretroviral drugs for Africans, because they are people who "don't know what Western time is" and thus cannot take the drugs on the proper schedule. His comments were patronizing and untrue, and he was condemned for them. If, however, he had said that most Africans shouldn't use the drugs because they are so toxic that they are difficult to take regularly and, if not taken regularly, might create increased resistance and actually *worsen* the epidemic, he would still have been condemned. But he would have been right. Indian officials and Western health philanthropists have been forced into a nearly impossible position by the increased availability of cheaper AIDS drugs. Nobody has been placed more squarely in this vise than Prasada Rao, the director of the Indian AIDS program. "In a just world, there would be enough money available so that you wouldn't have to pick and choose between prevention and treatment," he told me. "But today that world does not exist, and that money is not available. When it comes to treatment with antiretrovirals, we don't have a thousand dollars for a patient. We don't have a hundred dollars. We don't really have ten dollars. This is something that doesn't seem to register in the West. The model of Brazil"—where the government will pay for antiretroviral drugs—"doesn't work here." Brazil's per-capita income of $5,029 is

eleven times India's, and Brazil spends twenty times as much per person on health care. India has a much bigger AIDS problem than Brazil does, and significantly fewer resources.

"They are wasting their money," Rao said. "They are spending three hundred million dollars every year to treat one hundred thousand people. This is ridiculous. This is a figure nobody quotes. You may think I am unkind to say this, but it would be wrong, it would be even criminal, to take that money and spend it on one hundred thousand Indians. If you spend for some on antiretroviral drugs, whom do you choose? Do you save the mothers so they can spend more time with their children? Do you go for the élite class, who run the cities? When you spend money on these people, you are implying that others can die. Because that is what this drug movement is all about. This talk of denying people treatment. Look outside my window." His office is on the grounds of the government health complex, in Delhi, a grim park filled with families looking for miracles that doctors can't provide. "They are dying of malaria, of diarrhea, of leprosy. There are thousands of the blind. And AIDS is important, even more important. But you can't tell me we should ignore everyone so that we can serve a few people. Not in this country."

Almost as an afterthought, Rao added, "What we need is a vaccine. We need attention paid to the nine hundred and ninety-five million Indians who are not infected with H.I.V." Vaccines are among the world's most effective health interventions. Millions of lives are saved each year by a standard package of cheap vaccines that reach three-quarters of the world's children. However, there is little incentive for companies to invest in them. As the Harvard economist Michael Kremer has written, "Despite recent scientific advances which have increased the feasibility of developing malaria, tuberculosis, and AIDS vaccines, global R&D on these vaccines is woefully inadequate."

Vaccine development is hampered not only by science—or even principally by science—but also by market forces and liability issues. When I asked Seth Berkely, the president of the International AIDS Vaccine Initiative, about the scientific obstacles that stand in the way of developing a vaccine, he acknowledged that there were many, but then said, "What would happen if tomorrow we had an H.I.V. mutation that started to spread by the respiratory route in the United States? Well, we would all work 24/7, and we would throw a ton of money at the problem."

AIDS primarily affects poor countries, however, and, twenty years into the epidemic, there has been no such all-consuming effort to produce a vaccine. Most pharmaceutical companies believe that they will have a hard time selling enough vaccine in places like Africa or India to recoup their research costs. There is an irony here: research suffers because it is a global public good—and an extremely costly one—in which no single country has sufficient incentive to invest. As desperate as South Africa, India, and China are, it's not realistic to expect the governments of these countries to put up five or ten billion dollars for vaccine research, particularly before it's possible to know whether this research will succeed. Kremer has been the most eloquent advocate of creating a global system that would allow countries to buy vaccines in advance—in other words, of guaranteeing companies a market for their investment. That way, there would be a reason for them to take the risk.

"We must treat those who are sick with compassion and with whatever medicine we can provide," Rao told me before I left his office. "But the answer has to be in the form of a vaccine. After all these years, I can't think of anything more profoundly frightening than spending billions of dollars on drugs and making the epidemic worse."

## VI

"I make drugs," Yusuf Hamied told me when I asked him whether it made sense to focus so heavily on treatment rather than on prevention. "I can only do what I do."

With a billion people living in Hamied's principal market, it is natural to wonder if the potential sale of H.I.V. drugs, and the profit it would bring in India, interests him. "We have four hundred products, and the AIDS drugs are twelve of them," he told me. "You must understand my philosophy in life. For the year ending March 31st, our turnover was two hundred and twenty-seven million dollars. A profit of thirty-three million net, after tax and after everything, you see. It's just my wife and I. We have no children. We are very rich. Even in the first six months of this year, our sales were up twenty-five per cent over last year. I'm not a revolutionary. I'm a businessman. But, really, how much money do you think I need?"

Hamied is an unlikely person to call himself an Indian nationalist, but he often does. His father, who died in 1972, was a Muslim from Aligarh, and his mother was a Lithuanian Jew. They met in Germany in 1925, while Hamied's father was studying chemistry. Hamied has a place in Mauritius, is fond of Hong Kong, and travels frequently to New York. But he spends most of his time in a quiet, sun-drenched apartment not far from the center of London.

When I went to see Hamied, he was eager to share the yellowed treasures of his life—pictures of his Lithuanian grandparents, who died in the gas chambers, and one of the day, in 1939, when Gandhi came to visit Cipla in Bombay. There was a picture of Zakir Husain, who was India's third President and one of Hamied's father's closest friends. There were also many pictures of Hamied, his younger brother, Mohammed, who helps him run the business, and the conductor Zubin Mehta, with whom he grew up, in Bombay. For more than fifty years, he and Mehta have remained as inseparable as two men who live mostly on airplanes and different continents can be. It was after riots erupted between Muslim and Hindu residents of Bombay, in 1984, that Hamied and his wife decided to find a place in London, though they are still tax-paying citizens of India.

"People who grow up in Bombay can never give up the vision of what it was," Hamied told me during lunch at his favorite Chinese restaurant, near Hyde Park. "But that changed for me completely after the second round of riots, in 1992. In the thirties, my father often worked with this Jewish-run medical

company in Germany. In 1938, he went with my mother to Berlin. One day, he was on a train and the Nazis came on and they started to talk to him; they thought he was a Jew and said, 'Shut up, you bloody Jew.' He saw what was happening maybe in a way that people who lived there could not, and he begged all his Jewish friends to get out. They laughed and said, 'We are the intellectual élite.'

"My mother told me this story over and over—how the Jews of Berlin told my father they were safe because they were the intellectuals, the people who made the nation work. She said to always keep that in mind. And in 1992 I felt exactly as if it were 1938 in Berlin. In my own home. Because my name was Hamied. Everything in India is your name. A reporter rang me in the middle of the rioting and asked, 'As a so-called eminent Indian Muslim, what are your views of what is going on in Bombay?' I said, 'Why are you asking me as a Muslim? Why not ask me as an Indian Jew? I am a Jew.' I said, 'Forget Hindu, Muslim, Jew. Let us talk about Bombay. Eight million of sixteen million below poverty. Seven million living on the streets. No water. No home. No sanitation. This is not religious. This is haves and have-nots. That is what is happening in Bombay, in India, and in the Third World. That is our future.' "

After weeks of torrential rains, the sun came out on my last day in India. I left Bombay early in the morning and drove north to one of Cipla's factories, in Patalganga. The slums were alive with people taking advantage of the clear, dry air: kids, soaped up by their mothers, were enjoying their baths in rainwater that had been carefully collected the night before. Barbers with straight razors were at work by six; so were hawkers, prostitutes, and men selling mangoes by the side of the road.

It takes only an hour to ride from some of the world's most crowded slums to the factory, which is filled with antiseptic rooms where hoods and gloves must be worn at all times. Cipla manufactures nearly every major type of antibiotic, as well as nasal sprays, iron chelators, cardiovascular drugs, and antidepressants. The company's factories export to more than a hundred countries. The workers are well paid. Morale is high. I watched the stamping machines as they churned out as many as four thousand tablets every minute. Yet, at the end of each day, Cipla ships its AIDS drugs in bulk to Russia, Africa, Europe, and even to the Gulf of Oman, when, only miles away, people are infected (and will soon be dying) in numbers recorded almost nowhere else. Hamied told me it was his greatest shame. "Our first batch of AZT we had two hundred thousand pills, and we couldn't even give them away in India," he said; the drugs reached their expiration date before the government approved their use. This is just one of many bureaucratic problems facing even someone who has the money and the will to donate drugs in large quantities. Back at the main office, in Bombay, I sat with some of Cipla's scientists and with Hamied's younger brother, Mohammed. He handed me a bottle of pills that contained something called Triomune. It is a combination of three main AIDS drugs—mixed into a single tablet that can be taken twice a day.

Triomune can't be manufactured in Europe or America, because each drug is made and patented by a different company. In those places, this pill, which eliminates much of the complication of the antiretroviral regimen, would clearly prolong some lives and ease the suffering of many patients. But is it the answer for countries like India, China, and Africa? Of course not. Even the increased efficacy of the pills does not change the economic facts: the Indian government can't afford them. The simple cost of shipping the drugs around the country and storing them could equal the money the government spends on treating all other infectious diseases combined. A society that lacks a sophisticated health-care system, and one in which tens of millions of people do not even have access to clean drinking water, needs to focus on prevention. It simply can't afford to start with the most expensive drugs for its most complicated disease.

Hamied understands all that; he told me so more than once. Yet he is a drug manufacturer, and he feels compelled to make his stand. "Maybe it's just a prayer to cling to, but we need the prayer," he said with a sad shrug the last time we met. "What else do we have to offer?" ♦