

(Smallpox: The Death of a Disease, p.177-184)

THE DARKEST DAYS OF ALL—JANUARY TO JUNE 1974

Bihar presented the most daunting challenge by far, and the situation there kept deteriorating. A state of 62 million people, it was infamous for its corruption and criminality. We gradually found that the politically well-connected state smallpox program director had two staffs: a modest-sized official support staff and a second, very large group of clerks and bookkeepers, sequestered in extensive quarters unknown to the Central Appraisal Team. He had been given funds to hire several thousand additional vaccinators. Exactly where they were working, however, was a mystery. It was eventually learned that they showed up only once a month—to sign a pay slip and to collect about one-third of their allotted pay. The director pocketed the rest. It took months before the state minister finally agreed to transfer the program director to another position. In a way, I felt sorry for the man, as he had thirteen daughters and needed somehow to provide dowries for each if they were to get married.

Meanwhile, Dutta and Foege of the Central Appraisal Team, working with district staff, struggled to cope with a growing epidemic. Any optimism we had felt in January vanished with the results of the February search. It revealed 1,170 new outbreaks—twice as many as in December. Smallpox was spreading rapidly to the east and into West Bengal. Many more districts became infected. In Bihar reported cases grew rapidly in number, reaching 36,000 in May. Compounding the problem was a strike by Indian airlines, making it impossible to ship vaccine or for the Central Appraisal Team to move quickly between the capital and the states. Next, the railway workers went on strike. At about this same time, the global oil crisis began to be reflected in India as gasoline costs doubled and inflation spread. Finally, the health workers threatened to go on strike. Drought in southern Bihar—serious enough to require international assistance—was followed by monsoons in the north and the most severe floods in a decade. Hundreds of thousands of displaced persons were moving from place to place. Smallpox moved with them. I have often been asked, at what point of the program was I in greatest doubt of success for India and for the program? My feelings of despair during the first six months of 1974 are etched in memory.

Yet another catastrophe

In late April, formerly smallpox-free areas in India began to report smallpox outbreaks—primarily among laborers. These workers had come from a major railway center and industrial complex, Jamshedpur (population 800,000), in southern Bihar. By early May, 125 such notifications had been received, and ten to fifteen new ones were arriving daily. Brilliant arrived to find a totally disorganized health system and a poorly vaccinated, heavily infected population. Jamshedpur was the major industrial center for the Tata Industries heavy industrial manufacturing group. Officials of the company professed ignorance of the problem but immediately offered help in organizing and conducting an intensive search and vaccination program throughout the greater municipal area. More than 2,200 cases were found. To keep the disease contained, all railway travelers were vaccinated before departure; bridges and major roads were barricaded. Only those who were vaccinated were allowed to pass. It took two months before the outbreak was controlled. Eventually, the government and Tata Industries reached an agreement for Tata personnel to assume responsibility for the program throughout southern Bihar state. From the Jamshedpur epidemic alone, 300 additional outbreaks and 2,000 cases had occurred in eleven states of India and in Nepal.

In the face of these problems, Srivastav decided that the only way smallpox could be brought under control was to cease all efforts directed toward surveillance and containment and to launch an all-out “backlog fighting program,” with the goal of 100 percent vaccination coverage. This had been the failed strategy of the mid-1960s. Despite the protests of our program staff, Srivastav adamantly persisted. As problems mounted in Bihar and Uttar Pradesh, he insisted he would be thwarted no longer. Sharma learned of Srivastav’s decision only when the Bihar minister of health began to take action in June to shift program staff. Sharma bypassed Srivastav and appealed to the minister of health, Karan Singh. Together they flew to Bihar to put the program back on track.

It was clear that the special surveillance and containment teams were critical, especially in Bihar and eastern Uttar Pradesh. Additional Indian and WHO epidemiologists were hurriedly recruited and assigned. The number grew from twenty-six in October 1973 to seventy-nine in June 1974. With added personnel, vehicles, per diem, and other costs, our resources were stretched to the breaking point. Appeals for support from donor governments were not successful. Skeptical officials politely refused to provide further assistance. Their misgivings were understandable: the number of smallpox cases in India during the spring was the highest recorded in more than

twenty years. Moreover, the donor countries were regularly being solicited by frequent and urgent WHO appeals to bolster the foundering malaria program.

I spent much of my time through the spring of 1974 trying to raise more support, but with little success. Just as I was about to give up, I learned from Dr. Grasset that Swedish International Development Authority (SIDA) funds might be available (they had originally been ear-marked for a project that had been canceled). Grasset was eloquently convincing that the smallpox program was a worthy beneficiary. Within weeks, a memorandum of agreement was signed providing \$2.8 million. Over time, Sweden would provide \$15 million in support of the program. We received other invaluable help as well from the CDC. WHO's administrative staff had been overwhelmed by the burgeoning number of personnel in the field and the increasing expenditures for petrol, vehicle repair, per diem costs, printing, shipment, and other items. Knowledgeable management staff was needed. As he had done before, Dr. David Sencer, chief of the CDC, immediately came to the rescue, sending some of the CDC's principal administrative officers, including the center's deputy director, William Watson.

A SUMMER PROGRAM—1974

Early June 1974 was the psychological nadir of the Indian smallpox eradication effort and perhaps of the global program itself. For nine months the intensive campaign had been in progress throughout India, with a greatly increased field staff working frantically to control outbreaks. But by June there were still 8,700 active outbreaks that we knew about, and there were undoubtedly others. In all, 116,000 cases had been recorded—more than had been tallied worldwide during any of the program's previous six years! The staff was exhausted, and the weather was grueling with temperatures routinely over 40°C (104°F).

The epidemics in India made world headlines. On May 18, India tested its first atomic device, an event extensively covered by the international press. Meanwhile, local headlines throughout India reported the grim news about smallpox: more than 11,000 cases had been reported in a single week. The international press highlighted the paradox: sophisticated technological achievement in a country not yet capable of dealing with a disease that most countries had now conquered. Another important piece of news broke about this time—Pakistan expected to record its last smallpox cases in August (the actual date turned out to be October). Officials in India considered the prestige of the country to be at stake.

In a June meeting with the secretary of health and Director-General Srivastav, the Indian government agreed to fund an emergency program.

The number of epidemiologists was to be increased to one hundred. Also, 300 additional containment teams would be recruited—each to be headed by a recent Indian medical graduate. Meanwhile, the chairman of the Tata group, Mr. J. R. D. Tata, approved expenditures of \$900,000 for the provision of personnel and vehicles. Tata's endorsement carried important political weight; he was a major supporter of the Congress Party and had personal access to Prime Minister Indira Gandhi.

Search programs were intensified throughout India, strongly encouraged by a public statement from the prime minister, requesting “the fullest cooperation of all citizens.” Progress was to be monitored in terms of the number of infected villages—specifically, any village that had recorded one or more cases of smallpox within the preceding six weeks. At the end of June 1974 there were 6,400 infected villages. Elaborate measures were taken to ensure that every house with a case would have twenty-four-hour guards to make certain that the patients did not leave the house and that anyone who entered was vaccinated. All residents living within the nearest 500 to 1,000 houses would be registered and vaccinated as well. Poor families received a stipend to cover food costs during the quarantine period. Monthly searches were conducted in Bihar and Uttar Pradesh and a reward was offered to anyone reporting a case. By November 1974 the number of infected villages had fallen to 340. However, no one could forget that in January, only eleven months earlier, the situation had also appeared encouraging—until smallpox epidemics exploded across Bihar.

Disasters mounted. In August and September the worst floods in twenty years ravaged Bangladesh. Their aftermath was famine and tens of thousands of new refugees. Smallpox began spreading rapidly, the most heavily affected areas being along the northern Bangladesh-Indian border. Special surveillance teams repeatedly searched these areas, eventually discovering thirty imported outbreaks. Another setback was the discovery of forty infected households at one of India's holiest sites, Bohd Gaya, located near the capital of Bihar. Pilgrims had gathered to celebrate the 2,500th year of the death of the religious leader of the Jain sect. Some of this sect traditionally resisted

vaccination. The principal religious leader reluctantly agreed to vaccination. Guards were stationed day and night to watch each infected house; the entire area was quarantined by military police. Five adjacent villages were infected, but the last case occurred in February.

In April 1975, an army of 115,000 health workers conducted a week-long house-to-house search throughout India. Independent assessment of 5 percent of the villages showed that 85 to 95 percent of all houses in each district had been searched. To spur reporting, a reward was offered to anyone who reported a confirmed case and also to the health worker who validated it. Posters were distributed throughout the country. Only a few imported smallpox outbreaks could be found. On May 18, a case was discovered on a railway platform in Assam State where trains stopped en route to eastern India. The patient was a thirty-year-old homeless beggar. During the four days she was there, 4,500 railway tickets to seventy different stations had been sold. This prompted an intensive wide-spread search, but there were no more cases. She was the last.

On June 30, only thirty-five days after the last patient had been isolated, Minister of Health Karan Singh announced that smallpox had been eradicated from India. There was to be a public celebration on August 15—India's Independence Day. It was headline news in India and around the world. However, our entire staff was deeply concerned that the announcement might be premature, and this we did not want! I recalled only too well other occasions when many weeks had passed after we thought we had found the last case in a country—only to discover later that the excitement was premature, calling into question the credibility of WHO. The circumstances of the last case, the vast areas of India where small pockets of smallpox might still persist, the problems of fearful health officers hiding cases—all of these factors dictated the need for a discreet silence until far more time had passed. However, the minister was elated and could not resist announcing the news to the public.

We anxiously awaited Independence Day, the most important national holiday in India. National flags were flying everywhere and special flag-raising ceremonies, parades, and cultural events were taking place throughout the country. The heart of the celebration was in New Delhi where the high point was a special address by the prime minister. For me, it was an unforgettable moment when Prime Minister Indira Gandhi saluted the people of India on their twenty-eighth year of independence and proclaimed that India, for the first time in its long and storied history, had won freedom from smallpox. Fortunately, no further cases of smallpox were found.

Following the ceremonies, Director-General Mahler and I rode to the airport expecting to take a plane to Dacca, Bangladesh—the last endemic country in Asia and the last country in the world with the severe form of smallpox, *variola major*. The plane did not take off. All flights to Bangladesh had been canceled. The country was in chaos. The president of Bangladesh and his family had been assassinated and martial law had been declared. Indian troops were preparing to move to the border, bracing for a new tidal wave of refugees, some of whom almost certainly would be infected with smallpox.