
Computer Model Shows:

AIDS is triggering a new TB epidemic

by Jonathan Tennenbaum

Tuberculosis, the “killer of the 19th century,” is returning to ravage the cities and towns of America, in what threatens to become the greatest epidemic of that disease in any advanced-sector country in the postwar period. After declining steadily into the early 1980s, the number of new TB cases failed to decline in 1985, and actually increased by 3% nationwide in the course of 1986. Now reports are coming of explosive outbreaks of this classical, aerosol-spread lung disease, in New York and other major cities of the United States. In New York alone, TB cases increased by more than 20% in 1986.

A computer model of the interaction between AIDS and the spread of other infectious diseases, developed last January at the request of U.S. presidential candidate Lyndon LaRouche, explains exactly why tuberculosis is spreading out of control at this time.

TB is a disease classically associated with weakening of immune systems. Typically, a person infected with the TB bacillus carries the microbe in their lungs in an “inactive state.” The TB bacilli are “walled in” by the host’s immune system, and can remain so for an entire lifetime. However, if for some reason the individual’s immune system is weakened, then the bacillus can break out of control, leading to potentially fatal destruction of lung tissue and sometimes of other organs. In this acute phase, TB becomes infectious, spreading especially rapidly in areas of overcrowding and poor hygiene.

Thanks to vigorous public health measures going back more than a century, and thanks to the development of antibiotics, tuberculosis was on the way toward being totally wiped out in the United States and Western Europe. Whereas more than 70% of the population in urban areas of Europe at the turn of the century were already infected by the time they reached adolescence, in those areas today, even inactive TB is only found in a few percent of mostly elderly persons. A similar situation prevailed in the United States, until recently. Now, AIDS and the effects of economic collapse threaten to generate a holocaust of TB in America’s major cities.

By progressively destroying the immune system of its

victim, AIDS serves as the ideal “detonator” for TB in any individual already infected with the TB bacillus. Although still a small fraction of Americans are inactive carriers, medical reports from around the country already cite TB as a common “opportunistic infection” among AIDS victims. In numerous cases, acute TB is actually the *first indication* of AIDS infection.

The author’s AIDS modeling group in Wiesbaden, West Germany considered four types of interactions between AIDS and TB:

(i) The weakening of immune defenses of an inactive TB carrier, by the effects of the AIDS virus, will activate the TB bacillus and lead to acute TB.

(ii) Like all diseases which stress the immune system, TB will accelerate the progression toward full-blown AIDS in a person infected with the AIDS virus.

(iii) An AIDS-infected individual suffering from active TB, may become *highly infectious* for AIDS. The lesions caused by TB in the lungs provide favorable sites for large quantities of AIDS virus and AIDS-infected immune system cells to escape from the body. Infectious material coughed into the air by such an individual, if inhaled by another person, might infect that person through the macrophage cells which line the lungs and are “targets” for the AIDS virus.

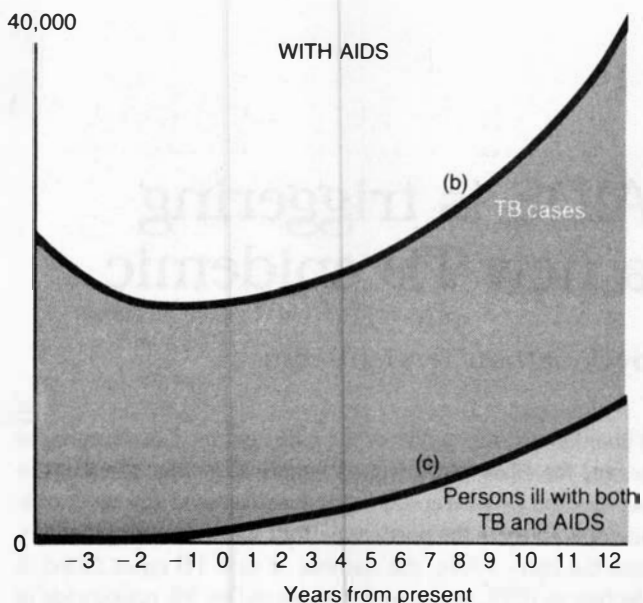
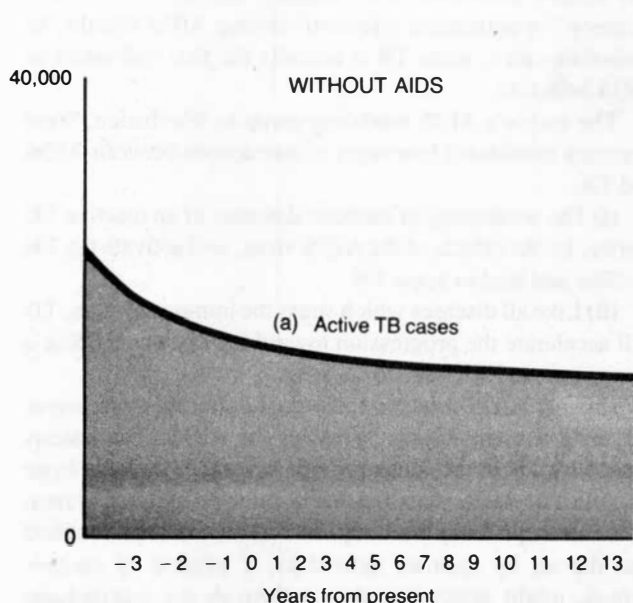
(iv) An individual suffering from both AIDS and TB may also be extraordinarily infectious for TB, due to the abnormally high amounts of TB bacillus produced in an immune-suppressed individual.

Of these factors, (i) and (ii) are already borne out by clinical evidence, while (iii) and (iv) are highly plausible, but not yet documented. It is quite significant that the leading French AIDS researcher, Luc Montagnier, pointed to exactly these mutually-amplifying interactions of AIDS and TB in an interview in the March 15 issue of *Journal International de Médecine*. Montagnier said, “In Africa, tuberculosis can promote AIDS infection, which in turn accelerates the tuberculosis. . . . TB suppresses the cellular immune reaction and accelerates the spread of the AIDS virus.”

Figure 1 shows the results of a computer model-run which simulated only the impact of factor (i) alone—detonation of TB by AIDS—for the United States. The first curve (a) shows an extrapolation into the future of the downward tendency of new TB cases, based on the 6.7% per year decrease prevailing during the early 1980s. In other words, the effect of AIDS is omitted. Curve (b) shows the projected impact of the AIDS epidemic on new TB cases, in terms of interaction (i) above. This takes into account, of course, the fact that persons contracting active TB will spread the TB bacillus to others. We see exactly the trend now being observed: TB cases begin to rise again in 1986, and continue growing out of control into the 1990s. Curve (c) represents the projected number of persons contracting both TB and AIDS.

This computer projection is highly conservative for a number of reasons. In calculating the spread of TB, a constant

FIGURE 1
Detonation of TB by AIDS



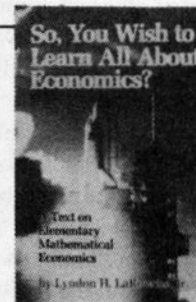
level of health care, nutrition, and living standard is assumed, corresponding to that prevailing in the 1970s. With adequate medical care, for example, acute TB cases are usually discovered early, and antibiotics are immediately administered which render the patient no longer infectious to others. Unfortunately, the level of medical care has collapsed catastrophically in many areas of the United States, including overcrowded "inner city" areas where the danger of TB spread is especially acute. There, it is common to find open TB cases roaming the streets, and we find the same kinds of conditions which prevailed in European cities in the 19th-century, when TB was the major cause of death in the population. Only the low prevalence of TB infection in the United States today, as compared with 19th century Europe, has prevented an otherwise overdue TB epidemic in the United States so far.

What our preliminary, highly conservative computer projections demonstrate, is that AIDS will act as a "detonator" in this explosive situation, transforming the potential for a major TB epidemic into a combined holocaust of TB and AIDS.

The implications for developing countries are even more devastating: an estimated 50% of the world's population are carriers of the TB bacillus. Only a full scale War on Disease, including immediate measures to improve housing and nutrition worldwide, can save humanity from the growing avalanche of multiple epidemics which AIDS is now setting into motion.

Author's note: Details of the AIDS-TB model are provided in a major article originally scheduled to appear in the Fusion Energy Foundation's magazine, *Fusion*. Unfortunately, publication of the relevant issue of *Fusion* has been

banned by the U.S. government as part of a blatantly unconstitutional move to shut down the FEF and other organizations associated with Lyndon LaRouche.



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