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EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Phone: 202-387-7171. Cable: Advancesci, Washington. Copies of "Instructions for Contributors" can be obtained from the editorial office. See also page xvIA, *Science*, 27 March 1970. ADVERTISING CORRESPONDENCE: Room 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE-6-1858.

Death from Heroin

Early this spring, Joseph W. Spelman, chief medical examiner of the city of Philadelphia, addressed medical colleagues on the topic of sudden death from heroin. To a shocked audience he showed photograph after photograph of victims with needles remaining in their veins who had died after self-administration of drugs.

In New York City, among the estimated 100,000 heroin addicts, more than 900 fatalities due to drugs occurred in 1969. In that city, for the age group 15 to 35, drug abuse is now the leading cause of death. According to Michael M. Baden, deputy chief medical examiner, the majority of fatalities are due to an acute reaction to the intravenous injection of a mixture containing heroin. The mechanisms involved in the deaths are not clearly established: overdosage has been suggested by some investigators; others speak of an allergic reaction. A survey of practices attending the production, distribution, and usage of heroin leaves one amazed that the death rate is not higher. The method of illicitly extracting morphine from opium is crude. The impure morphine is subsequently acetylated to heroin in secret laboratories, mainly in France. Purity of the product is of the order of 90 percent. Subsequently, the heroin passes through a complex distribution system and is adulterated repeatedly in unsterile conditions with a variety of additives, including quinine, mannitol, and other white powders.

The Office of the Chief Medical Examiner of New York City analyzed 132 street samples of drugs, all of which supposedly contained heroin. They found that 12 samples contained no heroin at all, and among the remainder the concentration of the drug ranged from less than 1 to 77 percent. Variability in the amount of the drug could be responsible for many fatalities. A user accustomed to a low concentration is likely to die from an injection of almost pure heroin.

Hard core addicts subject themselves to more than 1000 intravenous injections each year, and they are thus exposed repeatedly to possible antigens in the crude heroin or in its adulterants. In addition, the repeated use of unsterile drugs, unsterile equipment, and unsterile technique leads inevitably to human wreckage. In a description of the major medical complications of heroin addiction,* Donald B. Louria and his colleagues have identified the most common medical problem as liver damage arising from hepatitis. Other organs that are particularly subject to attack include the heart and lungs. Infection of the heart, though not so frequent as hepatitis, is more often fatal.

Drug abuse, which was once predominantly a disease of Harlem, is now a plague that is spreading to the suburbs. Drug use has been glamorized, while descriptions of the dreadful consequences have been muted. Parents and educators must inform the young of the corpses and of the physical wreckage. Despite warnings, adventurous youth will sample the illicit—and many will be hooked. The number of addicts is already estimated at 200,000, and the annual cost of their drugs at \$5 billion. With so much at stake in lives and in money, the nation should increase its efforts to curtail drug abuse and to find better ways to rehabilitate addicts. Two relatively new methods seem promising. One is the use of methadone.† A second approach is a psychiatric one, which emphasizes attitudinal changes and utilizes ex-addicts to give emotional support to addicts who wish to stop. Determined and imaginative effort might well disclose even better methods. This nation should provide the necessary funds to move vigorously against a spreading plague.

—PHILIP H. ABELSON

*D. B. Louria, T. Hensle, J. Rose, *Ann. Intern. Med.* 67, 1 (1967). †J. Walsh, "Methadone and heroin addiction: rehabilitation without a 'cure'," *Science* 168, 684 (1970).