

Memorandum

Date February 1, 1984

From Research Sociologist

Subject Acquired Immune Deficiency Syndrome in a Cohort of Homosexual Male Clinic Patients (Project 24): Update and Plans for Further Analyses.

To Director, AIDS Program
Thru: Chief, Epidemiologic Studies Branch HJ

Data from the cohort study will be analyzed in stages. The first step will be to determine how many cases of AIDS have occurred among members of the cohort. The next step will be to assess how many men selected for study participated. Subsequent steps will depend on the numbers and characteristics of patients (men with AIDS) and other men (with no evidence of AIDS) available for analysis.

In this report on the progress of our on-going study in San Francisco, I present current findings and outline plans for the general analysis of additional data. The outline conforms with the three objectives stated on page 1 of CDC Protocol 639.

1. Determine the cumulative incidence of acquired immunodeficiency syndrome and related conditions (i.e., lymphadenopathy) in the cohort of homosexual male clinic patients.

As of January 30, 1984, 86 members of the fixed cohort in San Francisco were known to have been diagnosed with AIDS. The cumulative incidence of 1251 per 100,000 is the highest rate reported in any population to date. Of the first 50 randomly selected members of the cohort who have provided specimens and been examined, some have had abnormal test results (CBC's), but none have had lesions or other signs of diseases associated with AIDS.

At the conclusion of the initial data-gathering period (July 1, 1984), we expect to discover that some proportion of the 770 men who were selected for follow-up had evidence of AIDS. Frequencies of diagnoses of AIDS and related conditions (e.g., chronic lymphadenopathy syndrome) possibly associated with AIDS will be calculated. The presence or absence of AIDS will be a major dependent variable in subsequent analyses, but we also intend to compare patients with Kaposi's sarcoma (KS) and patients with opportunistic infections (but no evidence of KS), patients with KS and/or OI and men with abnormal laboratory and/or clinical findings (but not AIDS by our case definition), and other categories of cohort members (e.g., those who participated in follow-up and those who did not).

2. Correlate morbidity (e.g., anal cancer, testicular cancer and malignancies other than KS) and mortality with evidence of AIDS among members of the cohort.

Major concerns in this observational study are attrition and our inability to gather information on those lost to follow-up (selection bias). Of the 86 cases identified to date, 41 of these men are known to be dead, six are too seriously ill to be interviewed and tested, and two have refused to participate. Six have moved to cities outside the 5-county San Francisco SMSA. Although twice as many patients have Pneumocystis carinii pneumonia (PCP) as have KS, the fatality rate for those with PCP and other opportunistic infections is twice that found for patients with KS.

Of the first 16 cohort members with AIDS in San Francisco who have been interviewed in our ambidirectional study, 12 had KS only and four had opportunistic infections. By July 1, we hope to have interview records and laboratory data on at least 30 men with KS and 30 men with PCP and other opportunistic infections in order to be able to compare and contrast similarities and differences in disease processes, reasons for survival, and risk factors for these two different manifestations of AIDS (KS vs. other).

About half of those randomly selected for participation who have not been reported with AIDS (noncases) are being enrolled in our follow-up study of men tested for hepatitis in 1978-80, so we hope to have interview records, clinical findings and laboratory specimens on approximately 385 men to compare with the interview records and laboratory findings of the 60 or so patients enrolled in our follow-up study. In addition, we hope to obtain some data on those who cannot be contacted by searching disease surveillance systems (e.g., diagnoses of cancer in the SF-0 and NCI SEER registries) and mortality reporting systems (e.g., death certificates obtained through the City-County Health Department, the State of California Department of Health, and the National Death Index). Frequencies of death, neoplasia and other reportable conditions will be tabulated among members of the cohort and compared to other populations.

3. Associate AIDS and other adverse outcomes (e.g., hospitalization, surgery and death) with social, behavioral and environmental risk factors as self-reports of these variables change over time.

After cases of AIDS and related conditions have been ascertained and enumerated, we will begin to look for associations of AIDS with social, behavioral and environmental risk factors as measured in the various sources of data available. The various sources and their relationships are schematically portrayed in Figure 1.

Approximately half of the noncases (190 in the prevalence study plus 12 in the incidence study) and about one-fifth of the cases of AIDS (12) will have been previously interviewed in the prevalence and incidence studies of hepatitis conducted in City Clinic in 1978-80 (Schedule A). For these members of the cohort, we will examine their exposure histories and sexual activities before they were first tested for hepatitis in 1978-80 and relate these risk factors to subsequent measures of risk factors as well as to the presence or absence of AIDS. Thus, for a portion of the sample, we will be able to correlate numbers of partners before first test for hepatitis (1978-80) with numbers of partners before first examination for AIDS (1983-84) and also associate both of these variables, as well as changes in numbers of partners (increases, decreases or consistencies), with disease status (case of AIDS or noncase) and other variables of interest.

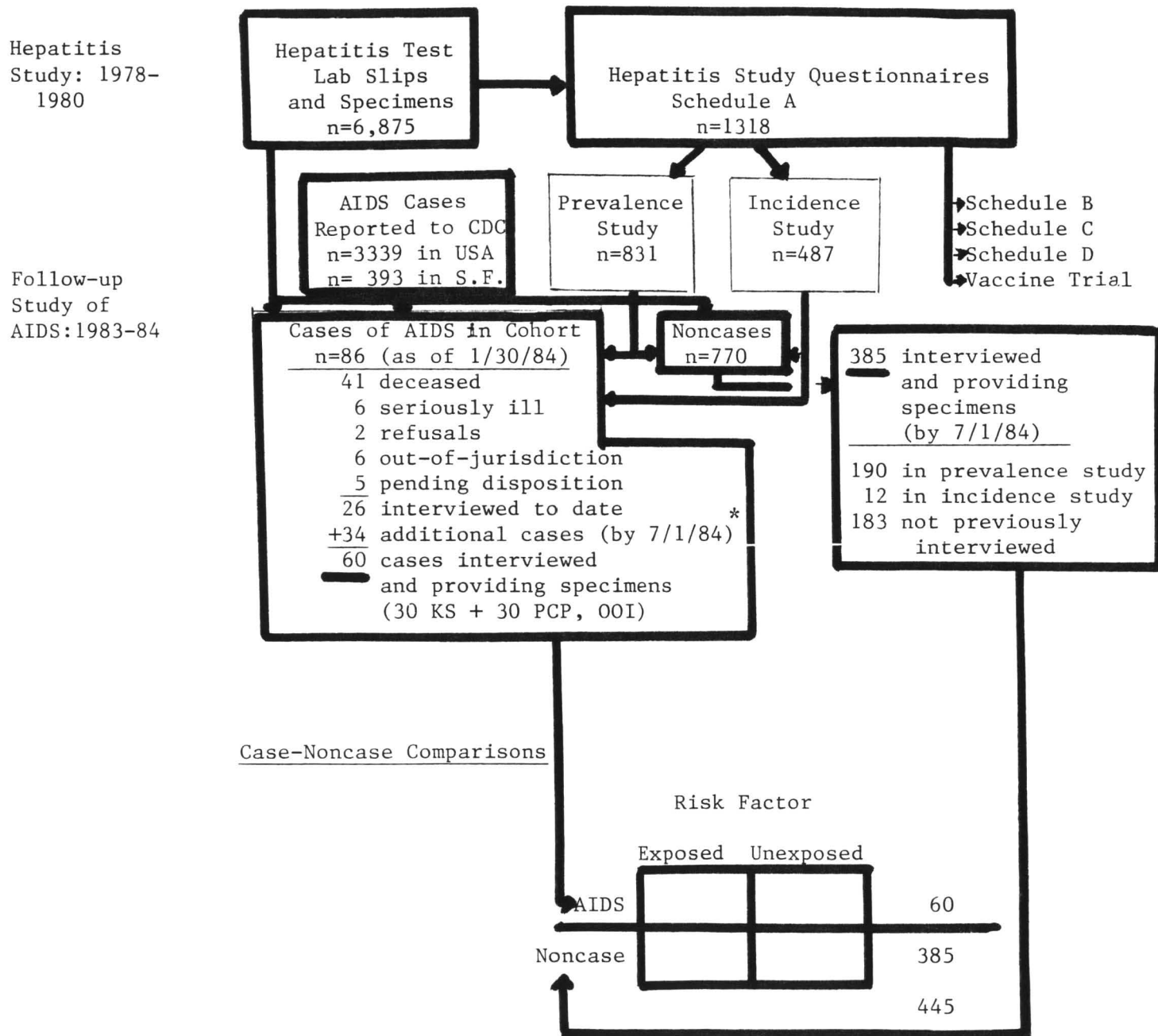
For those interviewed and providing specimens in 1983-84, we intend to compare exposure histories for approximately 60 cases of AIDS with exposure histories for approximately 385 noncases. These exposures will have occurred between the date of first test for hepatitis and the date of onset of symptoms for AIDS or date of interview (whichever comes first). Risk factors include histories of venereal infections (e.g., amebiasis, syphilis and gonorrhea), health behaviors (e.g., smoking cigarettes, drinking alcohol, sharing toothbrushes, razors and needles), the use of illicit drugs (e.g., marijuana, nitrite inhalants, heroin and other narcotics) and sexual behaviors (number of partners, places of contact, specific activities and exposures to persons reported with AIDS). Crosstabulations of risk factors with cases and noncases will be made, tests for statistical significance will be calculated, and nonparametric measures of association will be examined. We shall also look at odds ratio estimates of relative risk for various risk factors (e.g, the association between the use of nitrite inhalants and the occurrence of Kaposi's sarcoma).

Multivariate analyses will include stratification to "control" for spuriousness and stepwise logistic regression models (both forward selection and backward elimination procedures) to determine the relative importance of risk factors associated with AIDS. Although we will be looking for main effects, some of these models may also include second- and third-order interaction terms.


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Enclosure

Figure 1. San Francisco Cohort of Male Clinic Patients:
Sources of Data and Plans for Further Analyses.



* We anticipate that 25-30 more cases of AIDS will occur among members of the Cohort between now and July 1, and some of those who are now pending or out-of-jurisdiction will be tested and interviewed.