to exposed and unexposed construction workers. As discussed in our paper, we suggest that any differences regarding selection mechanisms would probably tend to bias the observed relative risk toward the null value. The reason is that, if there is a cardiovascular effect due to smokeless tobacco use, surviving smokeless tobacco users in the occupational group are likely to be more highly selected for physical fitness than the group of nonusers. This would introduce negative confounding into the study.

On the other hand, the comparisons preferred by Rodu and Cole would suggest that construction work protects against heart disease in nonusers. The question then arises, why is this protective effect not observed among smokeless tobacco users? Might that be an effect of the smokeless tobacco use? □

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Mortality among Injection Drug Users Identified as "Out of Treatment"

A number of studies have reported increased mortality among injection drug users enrolled in treatment programs,[1-5] but less is known about the survival of injection drug users not in treatment. Because most injection drug users are not in treatment,[6] such information is important for targeting programs designed to reduce mortality among injection drug users.

Between April 1989 and March 1991, injection drug users who were not currently (i.e., in the past 30 days) enrolled in any treatment program were recruited through outreach workers and public clinics in Portland, Ore. The 1769 participants were interviewed about their demographic characteristics, housing, criminal history, sexual behavior, and drug use and treatment. In 1992, to determine whether any participants had subsequently died, their names, aliases, and demographics were matched with death certificate information for persons who had died in Oregon or were reported to have died out of state between April 1989 and December 1991. The death rate per 100 000 person-years of follow-up was compared with the death rate per 100 000 for the 1990 Oregon population, adjusted to the age distribution of the study population.

TABLE 1—Selected Characteristics of the Cohort of Out-of-Treatment Injection Drug Users, by Survival Status, Portland, Ore, 1989 through 1991

Characteristic	No. Dead at End of Study	No. Alive at End of Study	Relative Risk	*P*
Age				
>34 y	26	813	4.1	<.001
≤34 y	7	923		
Sex				
Male	27	1270[a]	1.6	.27
Female	6	465		
Race				
Other	16	616	1.7	.12
White	17	1120		
Birthplace				
Oregon	17	587	2.1	.03
Other	16	1149		
Type of major drug used in previous 6 m[b]				
Heroin	14	663	2.2	.07
Other	8	827		
Years of drug use				
>18	28	841	5.8	<.001
≤18	5	895		
Years of injection drug use				
>12	22	843	2.1	<.05
≤12	11	893		
Ever in drug treatment				
Yes	24	973	2.1	.06
No	9	763		
Total	33	1736		

[a]Sex was unknown for one person.
[b]Missing data (question was added during the course of the study).

The median age of participants was 34 years (range: 15 to 74 years); 1297 (73%) were male, 1137 (64%) were White, and 489 (28%) were Black. The median duration of injection drug use was 12 years (range: <1 to 53 years). Participants were followed for a total of 3149 person-years, until either death or the end of the study.

Thirty-three participants were matched with death certificates, resulting in a crude death rate of 1048 per 100 000 person-years. Compared with the Oregon population, the age-adjusted relative risk for death was 8.3; this risk increased with age. Among participants, major causes of death included narcotic overdose (13 [39%]), trauma (5 [15%]), infection (4 [12%]), and intracranial hemorrhage (4 [12%]). Three death certificates mentioned liver cirrhosis, and none mentioned human immunodeficiency virus (HIV) infection. Participants who died were significantly older, had used drugs for longer periods, and were less likely to have been born out of state than other participants (Table 1).

This excess mortality among Portland injection drug users identified as "out of treatment" is similar to that reported among injection drug users enrolled in drug-treatment programs elsewhere in the United States[3,4,7]; in Rome, Italy[5]; and in Britain.[2] The major causes of death in our study also correspond to those described among injection drug users enrolled in treatment programs,[1,4,5] although other US studies have identified HIV as a prominent cause of death.[6,8,9] The lack of HIV-related deaths in our study reflects the relatively low prevalence of HIV infection among injection drug users in Oregon.[10]

Detecting factors predictive of premature death in this cohort is difficult

because of the small number of deaths. Because we were probably less likely to find out-of-state deaths, the mortality rate for the cohort of out-of-treatment injection drug users is at least as high as that for injection drug users enrolled in treatment, and may be an underestimate. Larger study populations are required to better define predictors of death that can be used to target prevention programs for this high-risk population. □

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Public Health and Medicine

Susser's editorial about the proposed closing of the School of Public Health at the University of California, Los Angeles, in the November 1993 Journal[1] may have added fuel to a fire that may consume all efforts to unite public health and medicine. Susser described the first 50 years of the 19th century as being populated by "essentially amateurs" and dismissed public health development in England as being "dominated by physicians, and their public health education was a special but minor addition to their training..." in medical schools. Subsequently, he noted, "Before public health education achieved independence, it languished and often wilted [in] the medical school, in the shadow of a philosophy committed to the care of sick individuals...." Is not public health concerned with such individuals in the aggregate, or is it merely a series of regression equations and health belief models?

Referring to the proposed departments to be transferred to the medical school (which I predict will not happen), Susser wrote, "if a discipline is to thrive in schools of medicine, where the primary goal is to produce physicians who provide episodic medical care to individuals [Susser neglected to add, while making money], that discipline will do well to serve the practice of individual medicine and not the health of populations." Once again, Susser has set up a straw profession, suggesting the myopia of medical training and the episodic nature of doctoring. Must you always draw lines in the sand?

Susser emphasized the importance of the independence of public health, including a poliomyelitis narrative that ignored the contribution of a Nobel Prize–winning physician who developed a critical means of culturing the virus. For those who have tried to live in both worlds, I suggest that it is unnecessary to extol the virtues of public health, which are significant, by putting medicine down. Independence to some of us means being able to live and work interdependently, recognizing the value of our own contributions as well as those of others. □

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The Editor Responds

The facts of 19th-century public health history in the received version are as stated in the editorial but misread by Dr Lewis. Also misread by Dr Lewis is my account of the history of poliomyelitis research, which to my knowledge ignores no major relevant discipline nor the work of Enders, Weller, and Robbins, the Nobel prize–winning faculty of the Harvard School of Public Health to whom one supposes Dr Lewis refers.

The last thing we wish to do is draw lines in the sand; I am sorry to have given occasion for that misinterpretation. The central point made by the editorial was the necessity for the independent existence of public health as an academic discipline. To suggest that this necessity depreciates physicians, preventive medicine, or medical schools (part of my own history for many years) is a non sequitur as well as a misreading. All these are complementary to public health and to be valued for their own sakes. □

Mervyn Susser

The Key Role of Nurses in Local Health Departments

In December 1993, the Journal published four articles discussing the roles of nurses in public health through a century of practice.[1–4] These articles have been recently complemented by several findings from a 1994 analysis of responses from a Centers for Disease Control and Prevention (CDC)–funded cooperative project with the National Association of County and City Health Officials. The project is a national profile of local health departments; a mail survey was conducted in 1993 of the nation's 2888 local health departments, which were operationally defined as "an administrative or service unit of local or state government, concerned with health, and carrying some responsibility for the health of a jurisdiction smaller than the state." A survey response rate of 71.9% (2079 respondents) was obtained.

First, it was found that nurses constitute one of the largest groups of health professionals in the local health department infrastructure. Full-time filled nursing positions constituted 34% of the total reported (63 497) full-time filled public-health agency staff positions in local health departments. Of these full-time nurses, 63% were public health nurses,