workplace, I have in mind, first, the actual measurement of blood pressure, blood cholesterol, height and weight, exercise tolerance, and other physical characteristics that determine risk for heart disease and second, the initiation of activities that are designed to reduce whatever risks exist and to promote health. These activities could take the form of physical exercise, group sessions on use of cigarettes as well as alcohol, competition to improve one's individual or one's group health measurements, and counseling to enable individuals on regimes to overcome high blood pressure or other adverse health conditions. Such health action programs are already under way for executives in several companies whose managements have discovered that they are desirable, practical, and economical. Of course, they cost money, but they can save more in productivity. Because the problem of heart disease exists among lower-paid workers even more than among executive employees and because both health and economic benefits would be greater for all workers, several companies are now considering extending such health action programs to the entire workforce. Several have already started to do so.

In summary, we have the knowledge, precedents, momentum, and basic labor-management agreement on which to proceed with a research-education-action program to prevent heart disease and to promote health generally. Now is the time to go. It would make a big difference to health in the 1980's and beyond.

Alfred Whitehead

The California Heart Presumptive law was passed in 1938. In essence, it states that heart trouble developing or manifesting itself during a period while a fire fighter is in the service of a city or county fire department or any other fire protection district shall be presumed to arise out of and in the course of employment. This presumption is disputable and may be controverted by other evidence. In such cases where heart trouble is not disputed, the appeals board must find in accordance with the presumptive law. This law also covers peace officers in California. In numerous other States there are similar provisions that cover safety personnel.

At the time of the passage of this law, it was almost a gratuitous act of benevolence for fire fighters because it was passed long before medical technology could prove the validity of such legislation. In 1978,

over 77 percent of all fire fighter deaths were attributed to heart disease. This statistic, however impressive, reflects only half of the story, as only heart attacks suffered on the job were recorded as industrially incurred.

For many years, not even medical experts understood why fire fighters, both active and retired, suffered from heart disease at a rate that has run as high as twice that of the national average. Today those experts, through advanced testing procedures, have begun to comprehensively, if not conclusively, identify heart disease as the fire service's inherent silent killer. The prevalence of heart disease among fire fighters is double and triple that of any other occupational group. Tests of southern California fire fighters conducted during the past decade at UCLA have conclusively indicated the direct relationship between the incidence of heart disease and length of service. These data have also shown the therapeutic value of an aerobic exercise program as a combatant to early heart disease.

By its nature, firefighting will always expose its participants to the increased hazard of heart disease. However, with some responsibility accepted by the employee, the employer, and the public, we have been given a ray of hope that through comprehensive programs of proper diet and rigorous exercise fire fighters may be able to at least reduce the inordinate rate of heart disease and resultant early mortality. To be successful, these programs require education of the individual fire fighters, encouragement and enforcement by top-level administrators, and by the general public. Historically, without this combination, most attempts at exercise programs unfortunately have failed. With the reduction of heart disease among firefighters, public funds would also be saved by reducing costs incurred by early retirement and worker compensation benefits.

In spite of the fact that heart disease is far more identifiable with the occupation of firefighting than it was 40 years ago, today's fire fighter is constantly in danger of losing his presumptive heart protection because of recent fiscal constraints placed on Government, specifically through the ratification of Proposition 13. Many politicans, rather than streamlining Government by maximizing efficiency and eliminating waste, have reduced needed services and workers and, in addition, have continually sought to reduce spending by these same politicians have falsely lobbied that negative public opinion is the primary justification for their selfish attack upon the protective heart measures.

The invalidity of this argument was clear when, in 1976, and again in 1978, the New York Daily News polled its readers on their opinions of the existing presumptive heart laws for fire fighters in that city. Each time the response was overwhelmingly in favor of the protective statutes, especially for those between the ages of 50 and 60.

National statistics indicate that the average fire fighter lives only 7 years after retiring from active service. This indicates most fire fighters are dead, the majority from heart disease, before the age when a nonfirefighter retires. In Los Angeles County we don't have the same program as they do in Los Angeles City regarding the use of cigarettes. We have, through an educational program, reduced smoking in the Los Angeles County Fire Department to less than 20 percent.

Dr. Quentin Young stated in his presentation that there is no clear-cut causation of heart disease related to the workplace. I have already given you the statistics that show firefighting as the most hazardous occupation in the United States. It is inconceivable that the high percentage of heart disease could be due to chance. I believe the studies that have been undertaken show that the cause of heart disease in fire fighters is the workplace. Our workplace is at the scene of a fire. There is no way to remove all the hazards at a fire location. We who are fire fighters are literally being paid to die earlier than most of you.

William R. Harlan

It is clear that cardiovascular disease alone is responsible for the loss of 52 million man-days per year due to illness and consumes 29 percent of the health care costs of the workers in this country. For every worker dying of an industrial accident or from an industrial toxin, 50 workers die from cardiovascular disease. I think it is abundantly clear that we know very little about the occupational hazards themselves other than the likelihood of some groups such as fire fighters to have an increased death rate from heart disease. Except in a few cases, we are unable to pinpoint the specific toxic cause. We simply have not done the appropriate studies.

You are probably familiar with the relatively small number of occupational hazards and their causes that have been delineated: carbon disulfide in viscose workers, spasm of the coronary artery in nitrate workers, and the vibration white-finger syndrome that

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