loss of more than $60 million a year in productive time. For the water supply segment of the interstate carrier program, a different type of information is given, that is, that more than $100 million was applied in the last 3 years to goods and services required for improvement of water supplies. The special engineering services program of the Bureau of State Services has its effects in, for example, improved standards which reduce the cost of residential plumbing installations, and in economies achieved through other types of technical standards, guides, and procedures in the field of environmental health.

The Division of Occupational Health in the Bureau of State Services—Environmental Health reported several examples of benefits from its work relating to occupational diseases and health hazards but commented that statistical data to measure the economic impacts are not maintained or available. Noting that no single agency or event can be isolated as the sole source of specified health improvements, the Division suggested that its research and investigations have made important contributions to prolonging the life expectancy of Americans at birth, reducing the sickness accident rate in industry to one of the lowest rates among major industrial nations, and increasing the number of professional health personnel employed by industry. In particular fields, it pointed to the reduction or prevention of silicosis, TNT poisoning, lead poisoning, mercury poisoning, and lung cancer in the chromate industry.

The National Institutes of Health reports on several programs concerned with mental health emphasize that mental illness and retardation are among our most critical health problems:

> They occur more frequently, affect more people, require more prolonged treatment, cause more suffering by the families of the affiicted, waste more of our human resources, and constitute more financial drain upon both the public treasury and the personal finances of the individual families than any other single condition.

The total cost in public outlays for services in 1962 was about $1.8 billion for mental illness and $600 million for mental retardation. Indirect public outlays, in the form of welfare costs and wasted human resources, are said to be even higher; and, of course, the suffering of the afflicted and their families transcends financial statistics. Direct costs increased by 63 percent in the short period 1956–62. These estimates, attributed to the Blue Cross Association, are characterized as substantial understatements of the total economic cost of these afflictions.

Other aspects of the NIH programs are subject to similar comments although the economic and social costs of particular disease categories are smaller than for the broad fields of mental illness and retardation. A general answer to the inquiry about economic effects makes the point that NIH activities are directed to the conquest of disease and advancement of human well-being through medical research and the application of research findings, and that the furtherance of economic growth is not a central objective. The statement recognizes that the activities have direct effects on the economy through the employment of researchers and other workers, and that they also have indirect effects stemming from reductions in morbidity and mortality. The indirect effects may be of greater economic significance than the direct effects, because of wider implications for potential economic growth.

Notwithstanding "deep reservations concerning the full applicability of economic reasoning to health programs," the NIH report