Public Health Service Activities in Chronic Respiratory Diseases

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THE LAST two decades have effected a remarkable change in the picture of respiratory diseases. Pulmonary tuberculosis, once the most important chronic respiratory ailment, has shown a steady decrease in deaths and disability while the mortality from lung cancer has increased to impressive proportions.

Concern now centers on a group of nonspecific respiratory conditions, in particular pulmonary emphysema and chronic bronchitis, as well as asthma, bronchiectasis, interstitial pneumonias, and pulmonary fibroses of unknown origins. To these we should add their frequent companion, pulmonary heart disease (*1,2*). It is with this group of the chronic nonspecific respiratory diseases that our paper is primarily concerned.

Mortality figures for 1962 in the United States reveal that these diseases were certified as the underlying cause of 27,000 deaths. We can estimate, too, that they were a contributory factor in about 43,000 additional deaths, for a total of 70,000 deaths (tables 1 and 2). Comparison of this total with the 41,000 deaths caused by pulmonary carcinoma in 1962 indicates the magnitude of this current health menace. In the last 10 years the gross mortality from emphysema and chronic bronchitis has more than quadrupled and continues to grow faster than for any other diseases (*1,3,4*).

Admittedly, a multitude of factors account, at least in part, for this striking rise in mortality: longevity of our population, better control of other pulmonary diseases, survival to repeated bouts of previously fatal conditions in this era of chemotherapy, mounting environmental stresses. Evolutionary changes in diagnostic emphases, improved diagnostic tools, and shifting interest of physicians into areas once neglected also have improved, in varying degrees, the reporting of causes of death. No matter what the reasons for the increase, we are faced with the reality that such chronic bronchopulmonary diseases have been certified as the main or a contributory cause of approximately 70,000 deaths in the United States in 1 year, and this is a large number indeed.

Accurate figures on morbidity from these conditions in the United States are not readily available because systematic reporting of such data is not mandatory. However, reliable indicators lead us to the conclusion that the prevalence of bronchitis-emphysema and related disorders in the United States actually parallels in importance their reported mortality. Among all conditions for which disability allowances are awarded to males by the Social Security Administration, these respiratory disorders are outnumbered only by the cardiovascular diseases (*5*). The allowances under the SSA Disability Program to respiratory cripples represent, incidentally, an annual outlay of approximately $60 million, which gives some idea of their economic burden to our society.

Another index of prevalence of emphysema among males can be found in the population at Veterans Administration hospitals. Of more than one-half million patients discharged from these facilities during 1962, approximately 7 percent had a diagnosis of pulmonary emphysema (unpublished data from the Department

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Table 1. Mortality from chronic respiratory diseases in the United States, 1962

Diagnosis (ISC No.)	Number of deaths
Emphysema, without mention of bronchitis (527.1)	12, 368
Chronic bronchitis, with emphysema (502.0)	1, 919
Chronic bronchitis, without mention of emphysema (502.1)	817
Bronchitis, unqualified (501)	811
Chronic interstitial pneumonia (525)	4, 097
Bronchiectasis (526)	2, 105
Asthma (241)	4, 896
Total	27, 013

SOURCE: National Center for Health Statistics: Vital statistics of the United States. Vol. 2, pt. A. U.S. Government Printing Office, Washington, D.C., 1962.

of Medicine and Surgery, Veterans Administration). If only those patients past the age of 50 were considered, the figure would be closer to 10 percent.

The activities of the Public Health Service in the area of chronic respiratory diseases during these last 20 years have been both far flung and intense. The Service has continuously supported or directly conducted extensive clinical, laboratory, and community research on the subject, chiefly through its National Institutes of Health, its National Center for Health Statistics and, in more recent years, through its Division of Air Pollution.

Nearly 2 years ago, alarmed by the fact that the chronic lung diseases were fast becoming a health menace of first magnitude despite ongoing programs, the Division of Chronic Diseases undertook to review in depth the needs in this field and subsequently initiated a program of activities aimed at relieving and eventually controlling the serious situation. Direct responsibility for the development of such a program was placed on the Division's Heart Disease Control Branch and its Cardio-Pulmonary Diseases Section. A blueprint was prepared for these new Public Health Service efforts, charting them along three simultaneous approaches:

1. To evaluate thoroughly all aspects of chronic respiratory diseases in the United States in order to prepare a series of reports assessing current needs and available means for remedy.

2. To stimulate further investigations at all levels, with stress on the search for better tools of detection, treatment, and rehabilitation, as well as to complement ongoing programs and fill existing gaps.

3. To promote the implementation of remedial services.

I want to elaborate on the third approach, where our program places central emphasis. To be successful, a program of disease control should provide, in addition to reliable methods for detecting cases, adequate means for managing the identified patients. The feasibility of mass detection of cases with existing procedures has been fairly well established, and we may reasonably expect further improvements in methodology as time and work go on. The great challenge we have to answer, however, is

Table 2. Chronic respiratory diseases as underlying and contributory causes of death in the United States, 1955 [1]

Diagnosis (ISC No.)	Number of deaths			Ratio of total conditions to underlying causes
	Underlying cause of death	Contributory condition	Total conditions	
Emphysema and/or chronic bronchitis (527.1, 502.0, 502.1, 501)	5, 927	12, 360	18, 287	3. 1
Chronic interstitial pneumonia (525)	2, 289	3, 923	6, 212	2. 7
Bronchiectasis (526)	2, 197	3, 166	5, 363	2. 4
Asthma (241)	5, 940	7, 143	13, 083	2. 2
Total	16, 353	26, 592	42, 945	[2] 2. 6

[1] Table, reference 3.

[2] Applying the ratio 2.6 to the 27,013 deaths in 1962 listed in table 1 yields an estimate of approximately 70,000 deaths in 1962 with chronic respiratory diseases as the underlying or contributory causes.

in providing appropriate care for the cases that are discovered. I submit that the sizable body of knowledge and techniques accumulated through years of research, if universally applied to the relief of the chronic respiratory diseases, would go a long way in answering that challenge. But a considerable lag exists in this area, as in many other areas of medicine, between available knowledge and its assimilation and beneficial use. So we have addressed ourselves primarily to bridging this gap by collating, organizing, and disseminating all useful information on the subject and seeing that the material reaches the medical practitioner, in whose hands lies the ultimate responsibility for the management of patients. We will, at the same time, extensively campaign for community education in all the factors of this unfolding threat to the health of our citizens.

To do this we concentrate on stimulating and supporting carefully designed programs that, hopefully, will demonstrate the optimum methodology for managing the chronic respiratory diseases and the benefits afforded by these programs. Such demonstrations are necessarily costly and are currently being supported by means of community health grants which are particularly suited to endeavors of this kind.

A number of projects covering different phases of the management and control of respiratory diseases currently are being organized or initiated. They range from comprehensive statewide projects to limited programs concerned with a local community or a partial aspect of the diseases, such as rehabilitation. Rehabilitation of pulmonary cripples, for example, is an approach that has already proved its particular worth in some pilot efforts (*6*). In this connection we are collaborating with the Institute of Physical Medicine and Rehabilitation, New York University, in producing a film which is expected to be released for distribution in July 1965. This 1-hour film is an animated text on the latest techniques used in rehabilitating individuals disabled by respiratory diseases.

Through these briefly outlined activities and their natural development in the months to come, we look forward to the eventual arrest, or perhaps the reversal, of the ominous trends we observe today in the field of chronic nonspecific respiratory diseases.

Summary

The chronic, nonspecific respiratory diseases were the underlying or contributory cause of approximately 70,000 deaths in the United States in 1962. Mortality from these diseases continues to increase at a faster rate than for any other diseases in the United States. Indexes of prevalence, based on Social Security and Veterans Administration data, parallel the reported mortality.

Ongoing activities of the Public Health Service are being complemented with a new program, initiated by its Division of Chronic Diseases, on the remedial and control aspects of the diseases. This new program follows three simultaneous approaches: (*a*) analytical review of available information as the basis of a series of reports on the subject, (*b*) stimulation of research for better tools of control, and (*c*) promotion of remedial activities by demonstrating the effectiveness of existing technology. Main emphasis is given to the third approach.

Several community demonstration projects are being initiated under support of community health grants, ranging in scope from statewide and comprehensive to local and concerned with a particular aspect of control such as rehabilitation. A 1-hour training film on respiratory rehabilitation is currently being produced for distribution in July 1965.

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