The laity rarely comply with the law.
Physicians frequently do not comply with the law.

Twenty-nine per cent. of the boards of health do not enforce this law.

REMEDIES.

- Educate the people.
- Adopt a better medical practice act.
- Make the doctors comply with the law.
- Make boards of health enforce the law.

VII.

TUBERCULOSIS ASSOCIATIONS AS HEALTH-EDUCATORS.

BY MICHAEL M. DAVIS, JR., PH.D., BOSTON,

Director of the Boston Dispensary.

TEN years ago the campaign against tuberculosis was a dream in the minds of a few enthusiasts, who, in 1905, organized the national association for the study and prevention of this disease. Today the campaign is a great national movement with associations in every state and many cities and, counting private and public funds together, it is spending \$20,000,000 a year.

The movement has developed hospitals, sanatoria, dispensaries and visiting nursing; but above all, a great educational campaign. Twenty million dollars are not taken from taxes or from philanthropic purses unless tax payers and givers believe that the results justify the expenditure. The belief that expenditures to relieve and prevent tuberculosis are worth while has been developed in the public mind through a persistent process of education. Last autumn 44,000,000 Red Cross seals were sold in the United States, nearly 2,000,000 in Massachusetts, and every Red Cross seal is a teacher. The anti-tuberculosis campaign has been first and last an educational campaign, as all "reform movements" fundamentally are.

With such remarkable results as the ten years' fight against tuberculosis has shown, the time has gone by when tuberculosis associations need devote much attention to explaining the importance of preventing this disease. The general campaign of education has largely completed itself and the public now needs education on specific points. The tuberculosis germ has proved itself a money-raiser. The time has come when, under the slogan of preventing tuberculosis, and with the leverage and the money which the anti-tuberculosis campaign furnishes, a broad health campaign must be waged, while at the same time attention must be devoted to the education of the public on specific questions of importance, for the reduction of waste or inefficiency in present anti-tuberculosis work.

The very success of the anti-tuberculosis campaign has brought with it two dangers. First,

that of over-specialization, a danger which creates, as it were, a vested interest in preventing tuberculosis, and fails to see its intimate relationships with other phases of militant public health work. The second danger is the popular fear of tuberculosis, which has been so developed as a by-product of the educational campaign that it acts in many ways as a handicap upon existing work and upon further progress. Anti-tuberculosis associations in their capacity as educators must devote themselves to informing the public that while it is well to fear tuberculosis, it is not well to fear it in the wrong way.* The dread of the disease should be based on information as to how the infection is most likely to be carried. They must understand that the way in which infection is usually carried renders a tuberculosis hospital harmless, either to life (or property values) in its vicinity; but that, on the other hand, an active consumptive in the midst of his home and family is dangerous to wife, neighbors, and above all, to the children.

Tuberculosis associations have issued millions of "don't cards." A card with one half headed "When to Fear Tuberculosis" and the other half "When not to Fear Tuberculosis" might be worth considering. Fear is a lever if it is intelligent; but a clog when it merely represents ignorance or half-knowledge.

As health educators, anti-tuberculosis associations must teach the public to stop the waste of money and effort which arises from the discharge of sanatorium patients without adequate supervision after they leave the institution.

The reports of the state sanatorium trustees have emphasized the value of the worker now engaged in this service,—a value not only to certain individual patients, but in stimulating greater activity and effectiveness of local bodies in supervising tuberculosis. The public must be educated to understand that it is not economy to see this work stop with the provision of only one worker; that further provision, correlating the sanatoria with local communities will much more than pay their cost; for the annual expense of the state sanatoria is over \$600,000.

As health educators, tuberculosis associations must educate both the doctors and the public towards the early diagnosis of the disease. It is already well recognized that this should be among the features of the campaign; but how make it a more effective feature? It seems as if the time had come when the most effective way to demand early diagnosis of tuberculosis is to call for frequent, periodical, general medical examination by skilled physicians. People may fear to go to a clinic or office which bears the label of tuberculosis; but they have no ground to dread a general medical examination. It is particularly fitting that we should use the public interest in

* Such studies as that of Dr. H. B. Lampson (U. S. Public Health Reports, January 8, 1915) supply excellent educational material. The general public should know that "ordinary exposure such as everyone encounters" was found in Dr. Lampson's studies to bring only 8% of infection, while intimate exposure brought 79%. Such concrete studies when made known to the lay public carry conviction as to the manner in which the infection is spread; while general statements glide too easily in and out of mind.

tuberculosis as a lever in the broader campaign for better medical supervision of all persons, for no disease is more dependent upon general living conditions than is tuberculosis.

As health educators, finally, anti-tuberculosis associations must strive to stop the waste arising from the development of more and more specialties. I have spoken of over-specialization as one of the dangers to which the tuberculosis campaign has led. A string of "public health movements" has followed in the wake of the anti-tuberculosis campaign. There are now societies to prevent infant mortality; to promote better obstetrics and establish pre-natal clinics; societies for school hygiene, for mental hygiene, etc. Each of these agencies is pushing forward special health needs, is advancing a special technique, and is putting doctors, clinics and visiting nurses into the field. Even in smaller communities often two or three, or perhaps four, of these special health interests will be actively engaged in field work. The anti-tuberculosis association may well strive to pool the health interests of a locality and coördinate the special clinics or nurses in one coöperative group, whether they are maintained by a city or by private agencies. Clinics may be combined in one building, the work of different nurses may be coördinated or generalized; and this without the impairment of the integrity of the different organizations supporting the branches of the work. Such pooling of health interests will mean financial economy and gain to public health. Inasmuch as no movement is more dependent for its success on the general advancement of public hygiene than is the anti-tuberculosis movement, none will profit more by this coördination of special activities.

The time has come when tuberculosis associations must be health educators, because this is the more effective way to be tuberculosis educators. The anti-tuberculosis campaign must be a public health campaign, if it is to be most effective. Let public health be on the banner borne on the front of the car, while the public interest in preventing tuberculosis, already aroused, will furnish the gasoline.

VIII.

THE RESPONSIBILITY AND OPPORTUNITY OF THE TEACHER IN PREVENTING TUBERCULOSIS.

By THOMAS F. HARRINGTON, M.D., BOSTON,

Director of School Hygiene, Boston.

MUCH of the apparent disagreement among authorities relative to the prevalence of tuberculosis among children is due to the fact that a distinction is not made between a tuberculous infection and a tuberculous disease. It is now admitted generally that all persons are infected with tuberculosis at some period of life. The great majority recover without ever knowing

that they had been infected. In childhood, it is very difficult to detect tuberculosis either by physical examinations or by recognized tests. Reliable data at hand demonstrate that relatively few infected children go on into the tuberculosis state. All infected in the first year or two of life die. Only ten per cent. of all deaths from tuberculosis occur during the ages of five to twenty years, inclusive. Even in families of the tuberculous, the infection of the exposed children is hard to demonstrate. In Boston, there are 7000 cases of positive tuberculosis on record at the office of the Health Department; these people live in 1340 families in which there are 2131 children of school age. A recent study of these children, by which the school nurses secured a report from the family physician or from a hospital clinic, showed that only 304 of the children had tuberculosis in a form that could be diagnosed. A later study of 196 children diagnosed as positively tuberculous confirmed this diagnosis in only eleven cases. Fourteen children of the group were diagnosed as doubtful; forty were deferred for subsequent observation, while 92 children of the group were returned to school as negative cases. A study of over 90,000 pupils in our elementary grades shows that five per cent. of the children were anemic, glandular, or under-sized. In other words, they were physically below par to a degree requiring preventive measures if they were to be saved from genuine tuberculosis. All reliable evidence today demonstrates that the education of the public in the cultivation of hygienic habits of living is the most effective means of combating tuberculosis. Obviously this leads us at once to the classroom. Here are grouped by compulsion, for a long period of the formative age of children, about one-fifth of the population. The opportunity to establish right habits of living is far greater in the school than at any other period or place. This the state of Massachusetts recognized early in the enactment into law that "schools shall give instruction in physiology and hygiene," and further that "in each of the subjects of physiology and hygiene, special instruction as to tuberculosis and its prevention shall be taught as a regular branch of study to *all pupils in all schools* supported wholly or partly by public money." Other subjects *may* be taught, e.g. algebra, geometry, language, natural science, kindergarten training, manual training, etc., if the school committee thinks such teaching expedient. Furthermore, the statute provides that every city and town of 10,000 or more inhabitants shall maintain a school in which the subjects of physiology and hygiene shall be taught, and towns which do not maintain a school as required by the statute shall not be entitled to its portion of the appropriation allowed from the "Massachusetts school fund." Nor does the responsibility of the school end here. A further act is mandatory in its provision that "the school committee of each city and town shall appoint one or more school