Legislative Implications of Adequate Tuberculosis Control

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Tuberculosis, a Major Public Health Problem

"Tuberculosis is a community public health problem. It is as sound a public economy to provide the necessary medical and social services for its control and prevention as it is to spend public moneys for a safe water supply, proper sewage disposal, and fire and police protection."

"Tuberculosis is a chronic, relapsing disease and, since one case comes from another, the disease is essentially a slowly spreading epidemic. Tuberculosis is a costly disease; hospital care takes months and even years, and it is expensive. A negligible proportion of patients are financially able to meet the cost of hospitalization—accordingly the taxpayer is paying the bill whether he realized it or not."

The above statement is simply an introduction to the fact that large legislative appropriations are justified and, as will be shown later, are essential requirements for adequate tuberculosis control.

Tuberculosis Laws—Rules and Regulations

Texas laws are basic and, for the most part, can be applied to restrictive measures to prevent the spread of infection, but the laws we have are not enforced. For example: Physicians do not report active cases of tuberculosis that they see, and directors of local boards of health are reluctant to stir up opposition by enforcement of the law since they hold appointive positions. The directors of local boards of health fail to inspect quarters where death from tuberculosis have occurred, and enforce upon owners the sanitary renovations necessary before another family is allowed to move in—due to lack of adequate funds for employment of enough sanitary inspectors. Compulsory measures for the management of individual cases of tuberculosis are rarely required. Most people have an aversion to, and fear of, legal entanglements. Moral persuasion, and holding out to recalcitrant tuberculous persons the existing compulsory regulations, will often be sufficient to gain their cooperation. People cannot be legislated into being

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good but can be influenced by forceful, tactfully trained public health workers and leadership into cooperation and, only occasionally, will it be necessary to apply the basic compulsory laws we already have.

**Essentials of Tuberculosis Control**

Surgeon General Parran, U. S. Public Health Service, summarizes the essentials of tuberculosis control as follows:
1. X-ray examination of the entire population.
2. Follow-up of every case of tuberculosis discovered by x-ray.
3. Periodic examinations, including x-ray examination, of persons with inactive disease.
4. Prompt treatment for patients with active disease.
5. Strict isolation of open cases to prevent further spread of the disease.
6. Intensified health education activities among the general population, patients, and their families.
7. Expanded research in tuberculosis and control measures.
8. Financial aid to the breadwinner and his family.

To carry out a program of such magnitude, it is evident, that an official agency is necessary and, for this phase of the organization, Parran outlines a pattern with the following comment:

"In the National Program, the accepted pattern of Federal assistance to the States would be applied under specific authorization of funds by the Congress. State Health Authorities, in turn, would take the leadership in the establishment and support of tuberculosis control programs in local health departments. Local health agencies, official and voluntary, would coordinate all available community resources, working closely with the medical profession and welfare groups whose help will be needed to the fullest."

With the above pattern in mind, it is evident that the foundation and superstructure of a Texas State-wide tuberculosis control program should be under the direction of the Tuberculosis Control Division of the Texas Department of Health.

**Comparing the Above Program with a Tuberculosis Control Program Proposed by the Board of Directors, Texas Tuberculosis Society**

We find conflict of authority interfering with a unified program and a division of responsibility. The six objectives outlined are right in principle, but wrong as to application.

There is revealed a division of responsibility in that the Texas State Department of Health is to take over a part of the control program; that the State Board of Control is to take over the medical policies of hospitalization of tuberculosis cases; and, that the Tuberculosis Committee of the Texas Medical Association shall
offer both departments an Advisory Committee. Wrong! Advisory committees, unsolicited, are usually resented, and are of little value. County and State sanatoria are just as much a part of a tuberculosis control program as is the establishment of other phases of the control program. Either the whole program should be handled by the Board of Control or legislation authorizing the establishment of a Tuberculosis Control Board, composed of a Directorate of Tuberculosis Specialists (three in number), nominated by the Tuberculosis Committee of the State Medical Association of Texas, and two lay members of the Texas Tuberculosis Society, thereby forming a directorate (not simply advisory) with authority to act and, under whom, the Director of the Division of Tuberculosis Control will carry out the details of establishing clinics, employing field nurses, and all other machinery of an efficient program authorized by the Directorate. The Superintendents of State Sanatoria would run their individual institutions in cooperation and in accordance with the Directorate of the Texas Division of Tuberculosis Control. The financial accounting should be set up either through the Texas Board of Control or a state auditor. Upon this point I am not competent to pass. Legislation eliminating the above division of authority and obviating conflict is essential to a unified, well-coordinated program. We talk blithely of a campaign to control tuberculosis and applaud and endorse "The Essentials of a Tuberculosis Control Program," as outlined by Parran, and our Legislature would probably agree to such a program in theory, but when it comes to the appropriation of funds to carry out such a program, they would want to know the approximate cost.

**A Yardstick of Measure is Submitted**

In December of 1945, while in Washington, New York, and New Jersey, I obtained the following information:

A representative of the U. S. Public Health Service stated that the data they had obtained on the latest, up-to-date, modern hospital construction indicated that the cost of construction of hospitals would be from $6,000 to $7,000 per bed (fully equipped), and the cost of maintenance from $6.00 to $7.00 per day per patient, with a full complement of personnel.

A visit to one of the New York up-state district hospitals at Oconto brought out the fact that the Homer T. Folks District State Hospital cost (ten years ago) approximately $5,500 per bed, and the present cost of maintenance was approximately $6.00 per day, which cost included complete staff and personnel. The construction of this hospital was excellent, consisting of single rooms, two-bed wards, and four-bed wards. Surgical collapse therapy was
done by a rotating team going from one district state hospital to another. Designated members of the staff made diagnostic itineraries to county health units of the counties of the district at stated intervals, taking with them a portable x-ray unit, and held clinics and conferences previously arranged by the field nurse.

I also visited a modern county sanatorium at Broad Acres, Utica, New York. The construction cost of which was around $5,000 per bed, fully equipped, and the maintenance cost of between $5.00 to $5.50 per day per patient. In the State District Sanatorium, one-half of the per-diem cost was charged to the county from which the patient came, and in the county sanatorium, the State paid one-half of the per diem cost of each patient.

In the State of New Jersey, the same rule applies as to sharing the per-diem cost per patient. Hudson County Tuberculosis Sanatorium, a unit of the Medical Center of Jersey City, is a magnificent institution. This institution, completely equipped with private rooms, two-bed rooms, and no ward of more than six beds, cost between $6,000 and $7,000 per bed, and maintenance for same is between $6.00 and $7.00 per day per patient.

Cost of hospital construction today is approximately $6,000 per bed.

When we consider that private hospitals charge from $5.00 to $7.00 per day, exclusive of laboratory and x-ray work, and utilize special nurses—charged to the patients—it is reasonable to assume that $6.00 per day per patient for efficient and adequate service is a reasonable cost with the present-day inflation.

Applying the above Yardstick of Measure:

4,000 additional beds at $6.00 per bed .......................... $24,000,000

4,000 additional beds' maintenance at $6.00 per diem ...... 8,000,000

Financial aid to bread winner:

This is figured upon the basis that 1 in 10 would so qualify or 400 at $60.00 per month. (The above fund would best be handled through local welfare agencies rather than through the family to be expended foolishly) ............................................. 288,000

To the Texas State Department of Health
Tuberculosis Division—annually .................................. 620,510

The $24,000,000 cost of construction can probably be reduced by Federal aid to $16,000,000. The $16,000,000 can further be reduced by cities and counties who have already voted bond issues. There will also be a further saving in the event Fort Ringgold is utilized
as a District State Sanatorium; nevertheless, a sizable sum will be required for construction to make 4,000 additional beds available.

The $8,000,000 maintenance cost to the State can be reduced one-half if the state and counties share alike the per diem cost of patients hospitalized in state and county hospitals.

The above figures may sound grandiose but to win against the enemy our Armed Forces demanded the best equipment, a full complement of trained personnel, unlimited financial support, and, until such was available, fought defensive battles, but as soon as the above requisites were available, a vigorous aggressive campaign resulted in shortening the time for subduing the enemy, thus saving many lives and money in the end—the same will be true in the fight against tuberculosis.

Supplying 4,000 additional beds is not the only essential of adequate tuberculosis control, but the establishment of pneumothorax and diagnostic clinics in thirteen areas, the employment of clinic and tuberculosis field nurses, part-time and full-time tuberculosis specialists, clerical assistants for tuberculosis registry, purchasing or aiding in the purchase of fluoroscopic equipment, purchasing or aiding in the purchase of x-ray equipment, along with the employment of sufficient personnel, is no small order and, as estimated by me, would be approximately $620,510 the first year. However, from my observation and experience, such a program of early diagnosis, pneumothorax treatment, supervision of cases returned from the sanatoria, and follow-up of all cases showing significant findings is so important that, in the beginning, new hospital construction should be on the basis of one bed to each death and so constructed that additional units may be added as needed; i.e., that 2,000 additional beds be built in localities where the death rate is high, and no units of less than 100 to 150 beds be constructed; that the diagnostic and pneumothorax clinics be instituted without delay with an approximate expenditure through the Tuberculosis Division of the State Department of Health of $620,510.

The item of financial aid to the bread winner and his family, while he is incapacitated, is so obviously an essential as to need no discussion unless it be the minimum or maximum amount per month.

Since 1917, there has been a decrease of 68 per cent in the human death rate from respiratory tuberculosis and 84 per cent in other forms due, to a considerable extent, to the elimination of the disease in cattle."

Stewart, in an article "Tuberculosis Control," made the following comment:
"It is helpful to recall that in spite of violent opposition, approximately 8,000 veterinarians applied tuberculin tests to 25,000,000 cattle in 1925, and applied nearly 250,000,000 tests between 1917 and 1942, inclusive. The reduction of bovine tuberculosis to the vanishing point, accomplished by a relatively small group of veterinarians in the course of 25 years, challenges 150,000 licensed physicians in the United States to eradicate human tuberculosis."

**Adequate Appropriations for Tuberculosis Control is Sound Economy**

The National Tuberculosis Association estimates that every death from tuberculosis represents an economic loss (in treatment and loss of employment) of $10,000. By the same token, the economic loss from the 2,923 deaths in Texas in 1945 was $29,230,000.

From Canada, Richards reports: "Ontario has a very active, efficient prevention department which has calculated that it costs approximately $500 to find each case of tuberculosis; about $1,000 to treat each minimal case of tuberculosis, $3,000 for each moderately advanced case, and $5,000 for each far advanced case."

Dublin, at an annual meeting of the American Public Health Association, made this statement:

"It is estimated that in two years, 1937-1939, when Detroit City Council was backing the Health Department with $400,000 in the tuberculosis case-finding program, more than $1,300,000 was saved to the City of Detroit in hospital bills by discovering and treating cases in the early stages of the disease and through the prevention, by this means, of additional cases."

These facts should be brought to the attention of the voters of Texas and the legislators by well organized groups throughout the state. In the recent race for governor, one candidate brought out the fact that only eight cents per capita was spent annually for the public health, stating, "that is a disgrace," which it is. In the Framingham Demonstration, a summary of which is submitted, the following statement in conclusion was made:

"The most significant result of this attempt to control tuberculosis was the way in which community sentiment was aroused, so that the total cost of health work from all agencies increased from 40 cents to $2.40 per capita. These figures indicate that lack of funds can be overcome provided proper leadership and education is available."

Whether legislative appropriation of funds by direct taxation on real estate or by sales tax should be made, is open to debate and decision, but the fact that the American people can afford to pay for tuberculosis control is illustrated by the fact that in 1940, the people of the United States spent:..."
$56,721,746 for chewing gum
$134,525,233 for cigarettes
$282,002,617 for ice cream

M. Scarborough, County Judge of El Paso County, made the following comment:

"We have a county hospital that we are unable to maintain to full capacity—and I am of the opinion that regional hospitals established by the State and either maintained by the State or partially maintained by the State with the balance furnished by counties is the solution of Tuberculosis Control. ... It occurs to me that the most equitable way in which to obtain the money would be either from a gasoline tax or a tax on gas and oil and gas at its source, that is, a production tax. It is my understanding that approximately 80 per cent of the gas and oil is paid for by citizens outside of the State of Texas, yet our National resources are being depleted, by having these resources leave the State of Texas. A tax such as this would give a definite sum per year upon which to rely and you would not be subject to the whim of the Legislature each year. It is my opinion, however, when you go before the Legislature with a Tuberculosis Control Program, you should have some concrete suggestion, as to where the money might come from; otherwise, you would have just as strong a fight against the sources of the appropriation as you would the appropriation itself regardless of the source."

To educate the voters and public officials of the State to the need of adequate tuberculosis control, leadership will be required, comparable to Community Chest Drives or Government Bond Sales, to organize workers and clubs in every county of the State.

It would also be wise to employ a Commission, composed of an architect with experience in construction of tuberculosis hospitals, an officer of the U. S. Public Health Service, a tuberculosis specialist with experience in the administration of State District hospitals, and a tuberculosis specialist with experience in tuberculosis control where county hospitals are used. Such expert advice is of material value in planning. Their recommendations would lend support for legislative requests for specific appropriations.

**Demonstration of Tuberculosis Control**

A demonstration that was made as an experiment in 1917 by the Metropolitan Life Insurance Company was as follows:

This company offered to the National Tuberculosis Association the sum of $100,000 for the purpose of demonstrating, if possible, the control of tuberculosis in a typical American community by applying the knowledge of medicine and methods of tuberculosis.
control. After some research, Framingham, Massachusetts, a town of approximately 17,000 population was selected for this purpose. The original appropriation was practically doubled in the course of the demonstration which covered a period of seven years—beginning in 1917.

The reports of this demonstration are set forth in a series of ten monographs, the last of which—number ten—gives the final summary report. This demonstration was under the direction of Dr. Donald B. Armstrong.

A preliminary survey of a sickness census, taken through a home canvass, disclosed a rate of 1.8 per cent for incapacitating sickness, 6.2 per cent for total illness, and .24 per cent for tuberculosis in a home canvass of 6,582 people of the town.

The establishment of a diagnostic and consultation service for physicians had two marked effects in case findings; namely, an actual increase in the number of cases, and a marked increase in the percentage of incipient tuberculosis discovered. Eventually, the ratio of active cases to annual deaths from tuberculosis was found to be nine to one. In other words, wherever there is one death caused from tuberculosis, one may expect to find approximately nine active cases of tuberculosis. It was also found that one per cent of the population of this typical town had active tuberculosis and, also, one per cent of the population were arrested cases of tuberculosis. It was also found that the percentage of the cases discovered in the early stages increased from fifty-five per cent to eighty-eight per cent, while the cases reported before death increased from 60 to 93 per cent. The percentage of cases treated in institutions increased from 15 to over 50 per cent. The experience of the demonstration indicated that from one to two institutional beds were necessary for every annual death of tuberculosis.

The most significant result of this attempt at tuberculosis control was the way in which community sentiment was aroused so that this small town was willing to pay for tuberculosis control. The cost of health work in the community for all private agencies increased during the seven years from $900 to $17,000 per year. The total cost of health work in the community for all agencies increased from $0.40 per capita per year to $2.40 per capita per year. These figures indicate that lack of funds can be overcome, provided proper leadership and education is available.

As an example of what can be done in the control and ultimate eradication of human tuberculosis, we may well profit by the example set and experience obtained by the Live Stock Industry in obtaining legislation.
H. R. Smith, General Manager, National Live Stock Loss Prevention Board, stated in an article in 1944:

"On March 4, 1917, the Congress appropriated $75,000 for tuberculosis eradication, but no provision was made for indemnity on reacting cattle slaughtered."

"In 1917 we supplied information to Congressman C. H. Sloan of Nebraska, author of a bill providing an appropriation of $1,000,000 for tuberculosis eradication. At the first hearing before the House Agricultural Committee, January 14, 1918, the writer stated that progress could not be made without partial reimbursement on reacting cattle slaughtered, so large a number of cattle were then infected, many breeders would otherwise be put out of business. It was pointed out that this was also a public health measure and every taxpayer should be willing to help. A clause was inserted to provide that the Federal Government would pay one-third of the loss to a limit of $25.00 on grades and $50.00 on pure-breds, provided the state or county would pay at least an equal amount. Soon after, numerous state legislative hearings were held and appropriations made out to meet the conditions of the Federal Laws."

"The House of Representatives voted $250,000, the amount recommended by the U. S. Department of Agriculture. Resolutions adopted by a number of livestock organizations, urging a larger appropriation, were sent and the Senate increased this to $500,000 for indemnity and operating expense, which, after a public hearing attended by livestock men from the various states, was later approved by the House."

"Each year, thereafter, hearings were held in Washington attended by representatives of producer organizations, market groups, State Departments of Agriculture and medical associations. Charts were prepared to show the progress in cattle testing under the able direction of the U. S. Bureau of Animal Industry and the state departments, with the resultant decrease in losses. These annual hearings were continued until 1928 when Congress appropriated $6,000,000. By 1932 this was increased to $6,505,800. The state and county appropriations totaled approximately $13,000,000 for that year. By 1935, the Federal, State, and County appropriations totaled $26,792,179—the maximum amount for any year with substantial decreases since, according to needs, until now a relatively small sum is required."

SUMMARY

1) The essentials and a pattern of tuberculosis control has been discussed.
2) Legislation for the correction of division of authority and conflicts that may arise is advised.

3) The present-day cost of construction and maintenance of 4,000 additional beds has been estimated.

4) The question as to whether the State and counties shall share, and share alike, is open for future decision, but that the State share half of the per-diem cost per patient is definitely advised where acceptable county and city tuberculosis hospitals exist, and until such time as District State Hospitals are built.

5) In carrying out one of the essentials of adequate tuberculosis control, to wit: X-raying of the entire population; employment of personnel, such as part-time or full time tuberculosis specialists and field nurses; and the establishment of tuberculosis pneumothorax and diagnostic clinics, well over $500,000 should be appropriated annually to the State Department of Health, earmarked for the Division of Tuberculosis—this is necessary.

6) Legislation for large appropriations of money is indicated and can be justified from an economic standpoint by the data and figures submitted.

7) An educational program for the purpose of better tuberculosis control is advocated and the appointment of a Commission composed of an architect and three medical experts in tuberculosis control to study and report their findings, is recommended.

RESUMEN

1) Se han discutido los rasgos esenciales y el patrón para el control de la tuberculosis.

2) Se recomienda que se expidan leyes para la corrección de la división de autoridad y de los conflictos que puedan ocurrir.

3) Se ha calculado el costo anual de la construcción y el mantenimiento de 4,000 camas adicionales.

4) La cuestión de si el Estado y los Condados deben contribuir, y contribuir igualmente, ha de ser decidida en el futuro; pero se recomienda definitivamente que el Estado contribuya con la mitad del costo diario por paciente donde existan hospitales aceptables en el condado y en el municipio y hasta tanto se construyan Hospitales Distritales del Estado.

5) Para llevar a cabo uno de los puntos esenciales del control adecuado de la tuberculosis, a saber, exámenes radiográficos de la población entera; empleo de personal, tal como especialistas de tuberculosis y enfermeras de campo, empleados parte del tiempo o de tiempo completo; y el establecimiento de clínicas para el diagnóstico de la tuberculosis y la administración de neumotórax, debe asignarse anualmente al Departamento de Sanidad del Es-
tado una partida de mucho más de $500,000, destinada para la División de Tuberculosis. Esto es necesario.

6) Es necesario que se expidan leyes que adjudiquen grandes sumas de dinero, lo que se justifica desde el punto de vista económico por los datos y cifras presentados.

7) Se aboga por un programa educativo con el fin de lograr un mejor control de la tuberculosis, y se recomienda el nombramiento de una Comisión compuesta de un arquitecto y de tres médicos expertos en el control de la tuberculosis para que conduzcan un estudio y presenten sus hallazgos.

REFERENCES
1 Plunkett, R. E.: "Tuberculosis as an Economic and Social Problem," Connecticut State Medical Journal, 8, 9, Jan. 1944.