part of treatment at a tuberculosis dispensary; it is usually not even desirable, because: (i.) Its administration cannot be effectively and safely controlled through a dispensary. (ii.) Its value is problematical, as no reliable statistics are possible under dispensary conditions, owing to the number of factors involved. (iii.) It is not the only way by which the attendance of patients can be secured.

(2) Dispensary treatment of tuberculosis must be based primarily upon an intimate personal knowledge by the doctor of the psychological as well as the pathological conditions of his patient. This is not easy to accomplish, but it is worth much labour.

(3) The principles of "graduated rest and exercise" can be effectively carried out in considerable detail by dispensary patients, and produce excellent results.

(4) The use of inhalants on a respirator is applicable to nearly all cases of pulmonary tuberculosis, and is a valuable adjunct to general treatment.

In this brief survey I have omitted any specific reference to the necessity for enforcing the ordinary hygienic rules in regard to tuberculosis, the visiting of homes, the regulation of diet, etc., such being matters of universal knowledge and application. I have tried to deal with points in dispensary treatment which are less commonly discussed, and my aim has been to show that tuberculin administration is at best but a very small part of a dispensary's activities. The future, I trust, may lie with the "tuberculosis," and not the "tuberculin" dispensary.

SANATORIUM BENEFIT FOR TUBERCULOUS SUBJECTS:

HOW CAN INSURANCE COMMITTEES BEST EMPLOY AVAILABLE FUNDS?

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AT no time will the value of the life of the efficient be greater to the nation than in the years that follow immediately the present titanic struggle, which is destroying such vast numbers of adults; and one excellent way by which we can reduce shortage is by exercising greater care of our prospective consumptive and other tuberculous subjects.

Tuberculosis is the arch-enemy of the young adult. By the passing of the Insurance Act three years ago the attack on tuberculosis was recognized as a national duty, and the whole anti-tuberculosis campaign entered on a new phase; it might, indeed, be said to have passed from a preliminary stage of preparation to one of definite action—from the static to the dynamic condition. There is no need to undervalue the previous action of enthusiasts, but the co-ordinated action of the State has in great measure replaced voluntary enterprises. This action of the State was necessarily handicapped by the limitations resulting when a great operation suddenly emerges from relatively slight preparation. We are having an ample demonstration of the same limitations on a far greater scale in the conduct of the present war.

Before the days of the Insurance Act, however much difference of opinion there may have been as to the ability and the plans of the persons in charge of the anti-tuberculosis movement, the whole campaign was in the hands of experts and enthusiasts, and the laymen associated were more or less trained, and acted under expert advice of the highest order and with exceptional knowledge and special sympathy. With the advent of the Insurance Act the campaign suddenly passed, on an enormously enhanced scale, into the hands of innumerable local committees, mostly unacquainted with the subject, and many of which had to do all their learning and make all their initial errors without much experienced advice or many administrative precedents to refer to. Of course, like all great reforms, the glamour of anticipation began to wear off with the friction of experience. The most impossible conceptions had been formed of the relief that would be afforded and the capacity of the money at disposal.

It was suggested that all tuberculous persons were to have sanatorium treatment or residence in "first-class hotels"; without delay their dependents were to be treated; their poverty was to be removed by sickness benefits and extra nourishment; contact cases were all to be sought out and dealt with, and the dying taken care of in suitable hospitals and homes. Very little experience showed that the funds available were not nearly sufficient for the materialization of such high ideals, and that even if economically managed financial resources would not provide for a tithe of the anticipated results.

We have now reached a stage when organizers and administrators are groping on all sides to find how best to distribute the very limited sums at the disposal of their committees, and to make the most efficient use of such grants as are available. After that knowledge has been acquired, the question of augmentation must be a pressing one. It is with a view of helping on the first stage of this inquiry that the present paper has been written.

The whole question of the management of tuberculous cases can be subdivided according to the state in which the disease is detected and comes under treatment. We require in a complete scheme the following elements: (1) Dispensaries for recognition and general treatment; (2) sanatoria for rest and observation which shall be annexes to the dispensaries; (3) open-air schools for children; (4) sanatoria for skilled treatment of well-defined active cases; (5) open-air colony centres for continuing treatment; and (6) hospital homes for the mortally wounded.

The first problem that emerges is one of figures. What number of patients must we be prepared to treat in each variety of institution? Of course the proportion will differ in various districts, according to wages, housing conditions, unemployment, and all the other indices of poverty, and the energy and capacity of the committee and the tuberculosis officer.

Recognizing that it is more or less generally admitted that 80 per cent. of the population are tuberculously infected in some form, the outstanding question is, How many show insufficient resistance to the infective agent and can be considered to require treatment? When arrangements are being made for the care of combatants, we have naturally all varieties of wounds to prepare for, from the scratch to the sword-cut, from the case which should easily recover to that which indicates an immediately fatal result.

With a view to elucidating the problem for my own committee, of how many persons may reasonably be estimated at any one time to have their resistance lowered sufficiently to require treatment, I have taken out the figures so far available in the district of Middlesbrough among the insured persons, who comprise roughly one-third of the population, and these figures suggest some very interesting points.

TABLE I.—INDICATING INSURED CASES NOTIFIED AS TUBERCULOUS IN THE DISTRICT OF MIDDLESBROUGH.

Year.	Number of Insured Persons.	Notified suffering from Tuberculosis.	Per Thousand.
1913	36,593	67	1'5
1914	44,815	152	3'7
1915	45,380	112	4'9
(approximate)		(notified in 6 months)	

The above returns must be far below the actual number existing, as of the 112 so far reported in this year 41 are in Class III., as defined below, and 16 or 18 per cent. are already dead—probably they have been ill on an average over two years. This duration is further emphasized by the observation that, of the 67 cases reported in 1913,

48 per cent. are dead, and of the 152 reported in 1914, 37 per cent are dead. The real proportion of active cases is probably nearly double, and will be between 5 and 10 per thousand.

The next problem will be the relative proportions of the various classes to each other, and their probable duration of life. For this purpose I have divided my patients into three classes, as follows :

Class I. comprises the classification of the Astor Committee, 1 and 2—cases who are definitely affected, but their health not materially interfered with when the disease is arrested.

Class II. comprises groups 3 and 4 of the Astor Committee—acute serious cases and cases of some standing, who have a considerable area of lung involved. When the disease is arrested in this class, they will never be as effective as before.

Class III. includes chronic cases with large area of lung involved. There is no reasonable prospect of a cure or of returning to efficient work in this class.

TABLE II.—INDICATING CLASS OF CASE NOTIFIED IN 1913 AND 1914 IN MIDDLESBROUGH DISTRICT.

1913.	1914.
67 notified cases. 6 not attending. <hr/> 61 cases.	152 notified cases. 13 not attending. <hr/> 139 cases.
6 in Class I. Of which 4 are still in Class I. " 1 is in Class II. " 1 is in Class III.	15 in Class I. Of which 11 are still in Class I. " 4 are in Class II.
13 in Class II. Of which 6 are still in Class II. " 7 are in Class III.	22 in Class II. Of which 13 are still in Class II. " 9 are in Class III.
42 in Class III. Of which 32 are dead. " 10 are still in Class III.	102 in Class III. Of which 54 are dead. " 48 are still in Class III.

The above table shows in the most striking manner the value of early recognition and treatment; and as these figures are drawn from the results of my predecessor, I have no bias in the matter.

Table III. shows the proportionate results, including those of the present year, and emphasizes the important facts that, for the present at any rate, successful treatment makes apparent a larger number of cases, and at the same time provides for their detection at an earlier stage, altering the proportions from more serious to less serious.

TABLE III.—INDICATING PERCENTAGE OF TUBERCULOUS CASES IN VARIOUS GROUPS.

	1913.	1914.	1915.
	Per Cent.	Per Cent.	Per Cent.
Class I.	9	13	29
Class II.	21	15	34
Class III.	70	72	37

On our present roll we have 84 cases in Class III., 65 in Class II., and 55 in Class I. The figures for the complete year will probably be more than double those shown. But taking the figures as they are, it would appear that for an insured population of some 45,000 we require about 23 beds for Class III. in some institution for advanced cases, 12 beds for Class II. in sanatoria for treatment of well-defined cases, and a similar number of places in colonies for their after-treatment. Class II. cases would on the average want about six months' treatment. As for Class I. cases, I think they could be treated in an institution which is a kind of annexe to the dispensary, and about 10 beds would be required, the average treatment being about one to three months. Of course there is no insuperable obstacle to the provision for the two best classes being under the same roof. The above estimate of Class I. is based on actual experience here. I am using my available beds for treating Class I., which require from one to three months' rest and treatment to re-establish their resistance and overcome their disease.

The above figures show that more than 45 beds of the various types are necessary for an insured population of 45,000, or 1 bed per 1,000 without the colony. There is in addition a dispensary roll of 204.

Now, what funds are available for handling these numbers? The following table shows the actual figures for the borough of Middlesbrough:

TABLE IV.—INDICATING EXPENDITURE ON TUBERCULOUS CASES IN MIDDLESBROUGH.

	1913.	1914.	1915 (estimated).
Institutional treatment	£1,012	£1,241	£800
Extra nourishment	90	270	135
Total	£1,102	£1,511	£935
Balance carried forward	1912. £703	£507	nil

It should be noticed that, while the work is increasing, the money available is decreasing.

What has been the result of the money already expended here on sanatorium treatment at a cost of £2,500? Here are the returns:

134 have received institutional treatment.
 45 dead, or 33½ per cent.
 34 hopeless, or 25 per cent.
 11 no record, or 8 per cent.
 35 have done well, or 26 per cent.

The question now forces itself, Can we not do better? Are we not spending the small available funds at the wrong end—giving doles with a view of piling up numbers rather than with a view to achieving any worthy success? Will it not pay the Insurance Committees and the nation better to spend most of their present available money on Class I. patients with a view of returning them to full active life? Shall we not jettison some of our hopes and try to aim at a more limited and realizable objective, at least until we have more funds available? The question is insistent and urgent in view of the national need, and demands careful discussion.

I have before me a report of one area with over 800,000 population and institutional accommodation for 249 cases. They have on their waiting lists 251 cases, which at their normal rate of taking in (their discharges are about 77 monthly) will have to wait at least three months before institutional treatment is available, ample time for a case to pass from Class I. to Class II., when it will involve at least double the expense on the committee, with half the result; for the patient will have lost his chance of permanent benefit, and will have exhausted his sick pay, etc., which will have been used before sanatorium treatment, instead of after, as it should be. After discharge he will be practically fundless, and this is when he needs money most. The problem is, Would it not be far better to select the best cases for immediate admission?

These questions demand serious consideration, and various Insurance Committees are looking for light and direction. They have lost their way and are in doubt. Some are getting hopeless and are fast losing their enthusiasm, and will, if they see no better results, presently get apathetic. Let us ask boldly: Can we not get better results with the money even now available? Are good results not better than mere numbers? Can we not get more funds, so that the financial position and the work which should be done can be brought more into co-ordination? Or shall we still shirk the issue, and pile up numbers for annual reports, knowing that a considerable proportion of these cases are being dealt with without any possibility of lasting amelioration in their condition?