

DIRECT AND INDIRECT ADVANTAGES OF URBAN MALARIA CONTROL TO STATE HEALTH PROGRAM*

BY S. W. WELCH, M.D.,
State Health Officer,
Montgomery, Ala.

The advantages of urban malaria control to a state program are so numerous and diverse that it is difficult to choose the more important.

(1) Through the eradication of all varieties of mosquitoes from the city and its environs the citizens are relieved of the annoyance and discomfort of these stinging pests.

(2) Through the elimination of the anopheles and stegomyia the transmission of malaria, yellow fever and probably dengue is prevented and the level of community health raised.

(3) Owing to the higher level of health in general and to the absence of chills and fever in particular, industrial groups achieve a larger output and greater earnings accrue to the manufacturer.

(4) Merchants in towns where malaria control projects have been carried out effectively, testify to an appreciable increase in goods purchased by the citizens. This increase represents quality as well as quantity of food, clothing and household equipment purchased. This evidence indicates that a higher standard of living and better business follow in the wake of better health conditions.

(5) Traveling men and casual visitors learn of the work and its results and speak of it enthusiastically to whomever they may meet, thus affording the best advertising to the town without cost. This favorable advertising is certain eventually to bring industrial concerns to the city, as well as increased population drawn from other parts of the state and from other states not possessing these advantages.

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(6) (a) The preliminary work for such an extensive health project necessitates a judicious use of propaganda to enlist the sympathetic understanding and support of the best citizens. This work has a distinct educational value.

(b) The cooperation of the school forces may result in the introduction of the Carter Malaria Primer as a text book in the grades and the enlistment of the boys and girls as volunteer investigators and sanitary inspectors. These activities should be used by the teacher in connection with her use of the project method in education. For example, the Panama Canal might be made a great central teaching point around which are grouped lessons in history, geography, civics and health. The home project may be used to illustrate graphically and to vitalize the teaching of all of these subjects.

It will thus be seen that the educational features of our malaria control project may, in their far-reaching results, outweigh the immediate importance of economic and health considerations.

(c) Evidence of the leavening action of these educative features is shown in the readiness with which surrounding rural districts follow the example of the time in ditching, oiling and stocking with minnows, according to the principles laid down by the expert in charge of such operations in the city which is their trading center and an educational center for their high school boys and girls.

DISCUSSION

Mr. E. H. Magoon, Sanitary Engineer, International Health Board, Groveton, Tex.—The work of combating sickness by killing mosquitoes appeals to the lay mind more than other preventive work. Anti-malaria work, which requires sanitation as well as medical treatment, tends to gain more public support of health measures. We need greater publicity in reference to the good that can be done by health work. There is a misunderstanding that is too prevalent in reference to the work of health departments. I believe that the directors in charge of malaria control operations can do a great deal to do away with this misunderstanding and gain support for the hookworm control work, for the nursing activities, and for other work of a state health department. In one section I have been told that the nursing work and other activities of the state health department were much easier to carry out as the result of the previous work that the people were well pleased with. The previous work was the control of malaria.

Mr. George Parker, Sanitary Engineer, Jacksonville, Tex.—In malarious states, or the malaria belt, where malarial fever is the chief disease, proper control has been obtained in sections where control measures have been instituted. In all cases where this work has been done by field directors or health officers, or any one interested in malaria control, it has produced a good effect in the territory surrounding the towns where work was done, and also in near-by towns.

The commercial gain that comes from malaria control is certainly an item that cannot be overlooked. It has been conclusively demonstrated, particularly by the work Mr. Van Hovenberg has done on the Cotton Belt Railway, where he has been able to show what the railroad has gained in dollars and cents from work done in Cotton Belt towns. That is very important.

Dr. Welch also mentioned the traveling man, the traveling public, of which it might be said the traveling man is the advertiser. I have very often talked with traveling men about malaria control, or as it is most generally termed, mosquito control. At times the traveling man is not able to get to his headquarters town at the end of the week to spend Sunday. I have in mind a medium sized town where there is a first rate hotel, and also where anti-malaria work has been carried on for the past two years, that receives many of these week-end visitors on account of the hotel accommodations. It has also been a source of comment for these men to remark on the absence of mosquitoes, particularly if they have just left a town where mosquitoes were a constant night annoyance. In one instance I talked with a man who was curious to know "how it was done," saying that in the town where he lived mosquitoes were a continual nuisance. I explained, but he told me that his town could not afford to spend money for that purpose. I then asked him if he would contribute to a fund in his town to conduct such work, and was told that very little, if any, would be contributed. I then reminded him of the fact that his day's work depended largely on the kind of rest he had the night before, and inquired what extra amount he would be willing to pay for his room at the various hotels if he was assured that mosquitoes would not annoy him, and he said "about twenty-five cents." Under such conditions this man was willing to pay approximately \$6.00 per month or \$50.00 a year extra in hotel bills to avoid mosquito annoyance. When this and a few other facts were brought to his attention he readily stated that he would be willing to pay his share in his town should a mosquito campaign be contemplated.

The traveling man is certainly a good advertising agent. He is a close observer, and the propaganda that he spreads about the health conditions in any town is bound to come back to the state health department, and it is bound to bring to the knowledge of the state the activities of the state health department in malaria control, which, in itself, is a matter of education that will have a great bearing on what a body of legislators will do in regard to state health appropriations. In the communities in Texas in which I have directed malaria control, some of

the men hope to run for the legislature. These men will be in a position to have health work done and secure appropriations to carry it on. They have seen the advantages that malaria control has been and are willing to cast their lot with the state health department and see if such work can not be made state-wide.

One other influence is the advantage of working from a given point, using units of towns for malaria demonstration, from which anti-malaria propaganda and control measures radiate, and gradually extend from community to community. I know of a town that raised \$1400.00 in less than a day. They said, "If that other town can do it, we can do the same thing," and they did.

Getting into the schools is a great advantage. For a moment I am going to get away from the urban project. A malaria survey is being made in one of the counties in Texas. Each school district is being visited, a blood index is being made, and an educational program followed. An attempt is being made to have the 73 school districts each establish and maintain a gambusia hatchery and have full charge of distributing the fish throughout their respective districts. This hatchery will be under the direct supervision of the school children. The county embraces about 1100 square miles and has a population of about 37,000. Certainly, with such a movement under way the activities of the state health department must be recognized.

Mr. E. B. Johnson, State Board of Health, Montgomery, Ala.—Dr. Welch brought out three or four points which I think could be enlarged upon. In the first place, the idea that the community actually saves money by malaria control work. Personally, I believe in putting malaria control work on an economic basis. We should not do malaria control work in any place unless we are satisfied that there will be a return of at least a dollar and a half for every dollar spent.

We had one community last year in which we made a house-to-house canvass twice during the year. The figures given by the people show that in 1919 they spent for doctors, quinin, chill tonics and loss of wages, \$26,245. We did some malaria control work in 1920 costing \$3000.00. That year malaria cost them (again according to their own figures) \$521.00. In other words, they saved \$25,724 on an investment of \$3000— a return of over 700 per cent. These figures have been an important factor in influencing other places in Alabama to do work. We have been able to show other places these figures with the endorsements of the Demopolis officials and we have had other places put on the work simply because they saw that it paid Demopolis.

Another bit of education: we have introduced the Malaria Primer in every school where we are doing work, that is, in all where we possibly could place them, which was nearly all. The boys and girls are very much interested. In one place we gave them an examination on the book and they knew it from cover to cover. In fact, they found things I did not know were in it myself.

One day some boys saw us under a railroad bridge with a test tube trying to find some mos-

quitoes and the Health Officer told me that for a week afterward he was pestered by boys asking for test tubes. He would find boys early in the morning under bridges hunting for mosquitoes, and when they found a lot, they would come and tell him. He said he was able to keep a good check on his work, because these boys were interested and found things even better and more quickly than his inspector.

To me, the biggest advantage of malaria control work in communities is the effect on the surrounding rural districts. Most of our malaria is not in communities, but in the rural districts, and it is in the rural districts that we need to interest people in malaria control work. We can do this by ridding the trading centers of mosquitoes and malaria. We put on some work in Talladega City this summer. Within a radius of ten miles of the city several property owners have done some wonderful control work, merely because they saw what had been done in their trading center.

Some time ago I went out of Tuscaloosa on the Mobile and Ohio Railroad, and in the first fifteen miles I saw seven pieces of excellent drainage work. Later the property owners told me they did it to get rid of mosquitoes. Their trading center was Tuscaloosa, where we did malaria control work.

When the farmer sees his trading center free from mosquitoes and free from malaria he begins to think of making his farm the same way.

Mr. Frank R. Shaw, Sanitary Engineer, U. S. Public Health Service, New Orleans, La.—It occurs to me that the most important factor of the state health officer's program was mentioned by Mr. Parker, that is, the matter of appropriation.

Every man, whether he be a business or professional man, is concerned with dividends. The first question in his mind is: will the activity bring returns commensurate with the investment? It is true that there are benefits other than financial to be gained from health work, but cash return speaks loudest and such can be shown for this work.

In the matter of appropriations, legislatures can best be influenced by facts and figures which show the dividends to be derived. If every state health officer could go to his legislature and by definite data show that the expenditure of a certain fund during the previous year had brought about the saving of several times that amount to the people, it would not be difficult for him to get renewed or additional appropriation.

An advantage of malaria control is that the financial saving can be quickly shown and such will easily be the means of arousing interest in other activities. After a successful campaign of malaria control it will be much easier to convince city officials or the legislature that results can be secured from investments in control of typhoid or anything else.

Another advantage is that the field activities will bring to the attention of the people their negligence in sanitation and prompt their action along other lines. This is especially true where mosquito control is included and systematic premise inspections are made. The correction of private drainage, the destruction of cans and general clean-up certainly has a bearing on gen-

eral health. A particular instance of this was where the general premise clean-up caused an individual to observe that his sanitary can was very insanitary. He came to my office and in his broken English explained his purpose and to my knowledge made the correction. His health conscience had been aroused by the malaria work, as was apparently the case with others. For this reason malaria control work has a direct advantage to general health work.

Dr. T. H. D. Griffiths, U. S. Public Health Service, Norfolk, Va.—If we look at the title of this paper, "Direct and Indirect Advantages of Urban Malaria Control to a State Health Program," it will appear that those who have discussed the paper have not stayed close to the subject. It seems to me that this paper could best be discussed by state health officers who have not a malaria program alone but a definite state health program. It is the influence of malaria control work in urban communities that we are now considering—how urban malaria control may affect, directly or indirectly, the general health program of the state. I should regard it as unfortunate should we pass up this subject without hearing more from the state health officers who are present.

The feeling is growing—and the same thing was brought out in the resolution that was introduced this morning for the conduct of this general Association—that we should give those who are especially interested in one section an opportunity to visit another; that it is not to our advantage to get too highly specialized in any branch of the medical profession; and this thing applies to general health work. I have the feeling, then, that the time is ripe when this question of malaria control should become an integral part of the local health work just exactly like hookworm work, the prevention of typhoid, smallpox or other communicable diseases; in other words, I believe we have arrived at the time when the local malaria problem should be taken up, interwoven with the other health matters and handled by the local health organization. If malaria is prevalent anywhere, that fact should be utilized to help establish or build or strengthen the local health organization in the community. I believe if you make your malaria work a part of the state health program it directly and indirectly favorably affects the general health program of the state.

Mr. J. A. LePrince, Senior Sanitary Engineer, U. S. Public Health Service, Memphis, Tenn.—I have visited states in various parts of the South and I find, particularly in Alabama, that this urban malaria work is resulting in a very marked extension of their work out into the rural community. It would take a half an hour to explain the extent to which that extension, you might say, is taking place, but I strongly recommend to our workers who happen to pass through Alabama that they spend a day there and just see the effect of the work that is being done. There is no state health officer or assistant state health officer in the South, or the malarial part of our country, who could not gain some very useful information by making a short visit to those parts of Alabama where that influence is spreading so rapidly.