

# HOW SHALL WE SPEND THE HEALTH APPROPRIATION?

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It must be admitted that we cannot spend it as we would like. All human endeavor is hampered by tradition. Much of the work of health officers is done because it has been done before. Most sanitary procedure dates back a very long time and is based upon notions or theories developed when science and scientific health officers were even more rare than at present. If one were given a fixed amount each year for sanitary purposes, to be expended as he deemed most effective, untrammelled by precedent, it is not likely that a single city could be found to furnish a budget one would care to take for a model. No health department has as yet been organized on a scientific basis. Its powers and duties are given to it hap-hazard, sometimes from terror at an epidemic, sometimes at the insistence of a trade which hopes for benefit, sometimes because a councilman through exuberant enthusiasm, or for personal reasons, pushes a pet project, and sometimes, and this with increasing frequency, because some band of earnest reformers with more energy than wisdom, hopes to abolish some sanitary evil by plans of its own. More rarely it happens that a well conceived plan of the health officer is crystallized in an ordinance and vivified by an appropriation.

The merchant or the manufacturer if he hopes to succeed against competitors, must by good accounting learn which goods yield the highest profit. So the health officer, if he wishes his department to have its due share of the municipal budget, must learn which line of work yields the most for the sum expended. He should seek for greater financial assistance for the most effective work and should eliminate, cut down, or at least not emphasize, those functions which yield little return for the money. It is difficult to change the directions of sanitary endeavor but certainly it is our duty at frequent intervals to take account of stock and try thereby to discover the most profitable lines. It is also our duty to clearly set forth our conclusions even though it may not be easy to convert the public, and particularly town and city councils, to new view points.

One notion of which we must disabuse ourselves is that human life is priceless. There is, I know, a species of cant which loves this phrase and we are told that any expenditure is warranted which will save life. But people do not really consider life priceless. During the last decade I sup-

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pose that several thousand lives have been lost in automobile accidents, but most of us are willing to take the risk and no one suggests the abolition of automobiling, which alone would stop the accidents, though legislation is called for which would reduce them to a minimum. If the cost of saving life by official sanitary action is too great, that line of effort had better be abandoned even if lives are lost. A few deaths occur each year from trichiniasis. These could doubtless be prevented by a microscopic examination of each slaughtered hog. The cost however would be enormous, and it would not be worth while. A hundredth part of the sum if devoted to baby nurses would save a thousand times as many lives. There never will be a large enough health appropriation to do everything that will save life so let us try and spend it so that it will save the most lives.

In considering public health work we must take into account not only its cost to the municipality but also its cost to the citizens directly. We must estimate not only what it costs the health department to abate nuisances, to inspect plumbing, to improve the milk supply, to teach mothers how to save their babies; we must also consider how much these improvements cost the property owner, the builder, the consumer of milk and the mother. It is as unwise and unjust to throw a heavy financial burden on the citizen as it is to place it upon the city.

Lastly we must consider cost in connection with certainty of result. A man might be entirely justified in investing his savings in a cotton mill when he should hesitate to buy mining stocks or start an air-ship factory. We know that vaccination prevents smallpox, antitoxin cures diphtheria, the purification of water reduces typhoid fever, anti-mosquito measures exterminate yellow fever and malaria, and rat-proofing stops plague, but do we know that the isolation of advanced tuberculosis checks the disease, or that the inspection of milk farms limits epidemics, or that an anti-fly campaign reduces typhoid fever, or that meat inspection lessens disease, or the cremation of garbage lowers the death rate. I am not saying that these latter procedures may not be useful but that they do not justify expenditures as do those first named.

Much of the work of health officials may have very little direct influence on the public health but yet may be of great importance, and indeed may be looked on as a necessity for public comfort and convenience. In our financial statements we should segregate as far as possible the expenses of this kind of work. The Federal Census Bureau in its comparative statistics of cities has thus attempted to separate expenses which directly affect health as of medical inspection, laboratories, hospitals, school inspection, prevention of infant mortality and the like from those which indirectly affect it, as charges for the removal of ashes and garbage, the prevention of ordinary nuisances, smoke prevention, plumbing inspection and public comfort stations.

Many of these expenditures for the public comfort we would not wish to see cut down but we should object to have them considered as truly health expenses even though in many cities they are placed in the health department.

One of the debatable public health functions is that of sanitary inspection. There is no doubt that the sanitary inspection which banishes excrement is worth what it costs. There is no doubt too that the general cleanliness of premises conduces to personal cleanliness. In certain cities inspection directed against rats or mosquitoes is of fundamental importance. Some claim that great attention should be given the fly but they have not proved their point. In the average city of the north, the tendency is to make too much of sanitary surveys and the abatement of nuisances, much of which had better be left to the police. A few years ago most cities spent far more for nuisance inspectors than for medical inspectors and nurses and there are not a few which do so at the present time.

The inspection of plumbing, while desirable, has in many places been carried to an extreme, entailing needless expense on the builder. It is not properly a public health function.

So too, scavenging, the removal and disposal of garbage, ashes, refuse, night soil and dead animals, should not be considered primarily health work, though it is necessary enough, and ought to be done well, and sometimes the health department proves more efficient for its accomplishment than does any other. In New England most of the garbage is fed to swine. This usually causes some nuisance but ought not to cause much. I have never learned that it is a menace to health. Yet there is a constant pressure on our cities to adopt a more "sanitary" method of disposal by cremation or rendering. This usually entails a heavy additional expense. If the new method *is* sanitary and there is plenty of money, well and good, but if children still die from lack of antitoxin, or cannot get good milk, or perish from lack of doctors' or nurses' care, is it not better to feed the pigs a little longer?

For the present at least the control of the infectious diseases seems to be the most important and one of the most effective departments of public health work. Efficient medical inspection in typhoid fever, summer diarrhea, scarlet fever and diphtheria certainly prevents the extension of these diseases within and without the family. This is most apparent in the history of such work in small communities. Perfunctory inspection and advice amounts to little and is therefore wasteful. Efficient inspection will cost little more and will yield results well worth the cost. The value of visiting nurses in the infectious diseases we know little about but the outlook is promising. Let us go slowly and *record our results* lest we become extravagant.

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Antitoxin saves many lives. It might save many more. To get the best results it is necessary to administer antitoxin as well as to give it away. In this way it is given earlier and in better quantities. In New York in 1909 of 566 cases treated with antitoxin by private practitioners 69 or 12.2 per cent died while of 1749 treated by the health department doctors 58 or 3.3 per cent died, a saving of 151 lives. The cost of the service was \$18,000 or \$130 per life saved. Similar results from free treatment are obtained in Providence where it has cost about \$100 for each life saved.

Vaccination against smallpox ought to be one of the most economical of sanitary procedures. If every one could be thus immunized, as in Germany, the disease could be eradicated. It might cost \$2,000 or \$3,000 a year to keep 100,000 people immunized, a cheap insurance. General vaccination during an outbreak is less rational and less effective, but much cheaper and much more effective than isolation, indeed the latter alone is usually, in an established outbreak, not effective at all. Vaccination against typhoid fever and perhaps against some other diseases is also at times cheap and effective.

Quite at the other end of the scale of usefulness is terminal disinfection but perhaps it is only necessary to say in this connection, what probably most of you would agree to, that much of the money now spent for this purpose could be used to better advantage in other ways.

Hospitals for contagious diseases are expensive. When scarlet fever hospitals were urged in England thirty years ago it was believed that they would cause the eradication of the disease. Instead there is really no convincing evidence that they have at all lessened its incidence. Nevertheless, paradoxical as it may seem, there is evidence that removal to the hospital does prevent the spread of disease in the family. In Providence it appears that removal to the hospital cuts down secondary cases one third. If this were the only result of hospitalization it would not be worth the cost but most hospital cases cannot receive proper medical care and nursing at home and many lives are saved by removal to the hospital, particularly in diphtheria and measles. It is easy to extend hospitalization too far and many cases which are ready to go to the hospital, to save home trouble and expense, could be just as safely, and more economically, cared for at home.

The campaign against typhoid fever is very profitable. It has been shown that the cost of protecting the water supply is amply repaid by the prevention of sickness and death. But filtration and the tapping of new sources are usually based on other reasons besides health conservation, so that it is not fair to charge all the expense to sanitation. It has also been demonstrated that the removal of privy vaults markedly diminishes typhoid fever. In Providence I have no doubt that a hundred cases a year were prevented thereby. An actual investigation has shown that a single case

of typhoid fever costs at least \$125, and as the total expense to the health department of the removal of the vaults, was less than \$5,000 it appears that the cost of removal has been paid twice over every year since it was done; and the vaults should have been removed as nuisances even if they had no effect on health. We have of late been told that typhoid fever is propagated by dirty back yards and flies, and Levy in Richmond and Terry in Jacksonville claim to have greatly reduced the prevalence of typhoid fever and other fecal-borne diseases by efforts directed against privies, flies, and general dirtiness. If their claims are correct, well directed sanitary inspection may be another cheap method of fighting typhoid fever. So too district nurses and anti-typhoid vaccination may prove of great assistance, but as we begin to make use of them let us count the cost and tabulate the results as an up-to-date manufacturer would count the cost of a new process.

One of the most attractive fields of sanitary endeavor, from a financial standpoint, is the prevention of infant mortality. It has now been demonstrated beyond a doubt that the chief cause of a high infant death rate is the ignorance of the mothers. It has also been shown that this ignorance can be overcome by visiting nurses, baby consultations and the like. Wherever these are used intelligently the death rate falls. In Providence it appears that about 200 babies a year have been saved in this way. It costs about \$6,000 a year to do it, or \$30 per baby.

Milk supervision from the chemical standpoint is necessary to protect the pocket of the father as well as the nutrition of the child. It is worth all its costs. There is evidence too that dirty milk causes disease which clean milk would prevent. There is, however, dispute as to the degree and kind of cleanliness, that is freedom from bacteria, most essential. Under the circumstances it is well to go slow as regards both the expenditure of the health appropriation and increasing the cost of milk. Many cities have done much to improve the milk supply, but have done nothing to show the people where to get the good milk so the babies still die because their mothers buy the poorest milk in the city.

The inspection of foods has little relation to the public health though it is a subject which yields many startling news items and lurid editorials. One of the most absurd activities is the fight against "bob" veal. There may be reasons why the raising of calves should be encouraged as there are certainly humane reasons why the railroad traffic in nursing calves should be stopped, but there is no good reason for forbidding the use of immature veal for food. It may at times cause sickness but so do strawberries and lobsters and mince pie.

Certainly the very worst use which can be made of the health appropriation is to employ it for the purpose of paying political debts. Decreased efficiency is the sure result and the community which permits

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such a misuse of the public funds will deservedly suffer an increasing toll of sickness and death.

I am inclined to believe that the medical supervision of school life is an exceeding profitable line of sanitary endeavor. Nevertheless it must be admitted that few departments keep records in such a way as to show what is really being accomplished and at what cost. In Providence in 1911, taking account only of the more serious conditions such as malnutrition, tuberculosis, deformities, greatly enlarged tonsils, marked adenoid disease, middle ear disease and defective vision, to secure adequate treatment it cost about two dollars for each child. Much other work was done in minor skin diseases, pediculosis and a great number of comparatively unimportant ailments. It is desirable in this school work to give more careful study to methods and costs in relation to results, and if funds are limited, to focus attention on the more important "defects," striving to use properly this word so often abused in this connection.

One of the least costly and most productive lines of work is the keeping of accurate records of sickness, deaths and of expense. When a business concern goes into the hands of a receiver and the accounts are found in hopeless confusion, suspicion falls on the efficiency if not on the honesty of the former manager, and it may fairly be assumed that if he had kept a better oversight through accurate accounting there might not have been a receiver. When your committee on uniform health reports discussed with various members of this association the necessity for full and accurate records and accounts, a very good friend of the writer suggested that such things were of no use to anybody except some statistical crank like old Chapin. Yet I feel very certain that the time will come to most health officers when, in order to answer the pointed questions of some newspaper man, city councilman or social worker, there will be felt sore need for accurate statements of cost and results.

It is difficult to measure the worth of a bacteriological laboratory in terms of sickness prevented, just as it would be that of postage stamps, a telephone or a horse or automobile for an inspector. A bacteriological laboratory, is a tool, essential for the control of infectious diseases, just as a chemical laboratory is necessary for control of the milk supply. We cannot get along without either.

Educational work ought to yield great returns for the money. Lectures, exhibitions, moving pictures, leaflets, bulletins and press articles are all useful. Their relative effectiveness should be studied, just as an up-to-date business man studies advertising. The great problem is what to teach. To teach what is not so is far worse than not to teach at all. How much of what passes as sanitary science is not worth the name. The man who has to get out a weekly health bulletin is certain to print many half

truths as well as full fledged errors. It is sad to ask the public tomorrow to forget what they were taught today.

The purpose of this paper is not to offer dogmatic statements as to the value of this or that sanitary procedure but rather to ask questions and offer suggestions, and no attempt has been made to cover the whole field of sanitary endeavor. The paper is primarily interrogatory and I am asking this question "How shall we spend the health appropriation" of myself, fully as earnestly as I am asking it of you. If we will all take up these problems for careful consideration and study I am sure that it will lead to a more effective and economical expenditure of the public funds.