
AMERICAN JOURNAL OF PUBLIC HEALTH

THE VALUE OF HUMAN LIFE.

CHARLES V. CHAPIN, M. D.

Providence, R. I.

Read before the American Public Health Association, Washington, D. C., September, 1912.

Many attempts have been made to estimate the money value of human life, some of the most careful by members of this Association. The usual point of view is to consider that the money value of a life is represented by its value to its possessor, or to his family. Most hygienists count the money value of life in terms of earning power or wages. To the individual and his family his earnings are indeed the most urgent economic factor of life and it is natural that this viewpoint should be first in the minds of most of us. Though it does not take into consideration the very great economic importance of the non-wage-earning work of wives and other housekeepers, an estimate of wages lost by sickness and death does serve to illustrate the enormous dimensions and importance of the problems which the hygienists have to solve.

According to this view the capital value of a human life varies according to age, depending as it does on the two factors of earning capacity and expectancy of life. How much does a person earn and how long will he live? The answers to these questions will enable us to state how much he is worth. Years ago, Farr, in England, estimated that the new born babe of an agricultural laborer was worth \$25 and figured out an increasing value up to middle life, after which the figures slowly declined. Fisher, assuming \$700 as the average annual earnings of all workers in the United States, though he asserts, and probably correctly, that \$1,000 is nearer the true figure, calculates that the value of a wage earner varies from \$90 at birth to a maximum of \$4,100 at 30 years, sinking again to \$2,900 at 50. He further estimates, by using the census figures for age distribution, that the average economic value of the inhabitants of the United States is \$2,900.

We are not, however, obliged to rely on *estimates* of earning power. Price has made a careful study of the earnings, and consequent loss to themselves by disability, of a large number of workers in Maryland, who were afflicted with tuberculosis. He found that the minimum, actual and potential loss, was nearly \$3,000 and that maximum loss was \$36,000 in the case of a woman 36 years old receiving a salary of \$1,200.

Leighton has by another method figured the monetary value of life at different ages. His estimate is made by averaging the damages awarded by the courts for loss of life. His figures are for children under 5 years \$1,500, a maximum for adults between 25 and 30 of \$7,500, and a minimum of \$1,000 at 70 years.

What a man earns indeed represents his money value to himself or to his family but according to some it is not a proper measure of his value to the community. According to Hoffman the economic gain to society is rather the value of the product over and above wages and the other costs of production. This Hoffman attempts to estimate from the census figures. He says: "It is probably safe to assume that the net gain to society is at least equivalent to about \$300 per annum in the case of male wage-earners employed in American manufacturing and mechanical industries. Of course, the gain is less at the younger ages and probably remains fairly the same or level during the ages of 30 to 50, when the normal physical strength is enhanced by practical trade education and experience. The degree of variation in value may be placed between the minimum of \$75 at the age of 15 and a maximum of \$400 at the age of 32. If, upon a basis of average net gain to society of \$300 per annum, the fifty active years of a working-man's life represents a total of \$15,000, then if death should occur at the age of 25, the economic loss to society would be in round numbers \$13,000; if at the age of 35 it would be \$10,000; if at the age of 50, \$4,400; and, finally, at the age of 60, the loss would still be \$1,000." Nicholson apparently takes the same view and he estimates that the money value to the nation of a human life in England is towards \$5,000.

If these estimates of the money value of a human being to his family or to society, be applied to the population of a country such as the United States, the figures reach enormous proportions and if we estimate the money loss which results from permature death, or disability from disease, or accident, the amounts are among the hundreds of millions or even billions. The public is told that a large amount of the disease causing these losses is preventable and that the money needed for prevention is only a tithe of the amount now lost. Increased appropriations for public health work are called for and it is usual to compare the small appropriations for the saving of human life with the large appropriations for the saving of hog life and to call attention to the fact that our cities commonly spend many times more on the fire department to protect property, than they do on the health

department to protect health. In view of the tremendous money losses which it is alleged the community suffers, it is urged that this is a gross economic blunder. We are again and again told of the folly of refusing to spend the millions needed to prevent disease when this expenditure would yield a money return of hundreds of millions. Nevertheless our councils and our legislatures refuse to be greatly moved by these appeals and appropriations have generally shown no sharp advance. Why is it that this bargain is passed by?

Granting the estimates of our economists, and they are quite likely approximately correct, and granting that the health measures proposed will be effective, which is by no means certain, we may ask how does this viewpoint of the legislator and the taxpayer differ from our own, or what flaws are there in the business proposition which is being so zealously promoted.

As the extent and manner in which the burden of a tax is assessed and distributed determines in a large degree the attitude of the public towards that tax, so the distribution among the people of such losses as we are considering affects the attitude of the people towards measures intended for their prevention.

As regards the loss to the family from the cessation of the earnings of the sick or dead bread winner, if the family is thus compelled to receive public assistance *this* portion of the loss is distributed upon the whole community but the amount of such assistance is usually small as compared with the total loss of earnings concerning which so much is said. The greater part of the loss is not distributed and is not felt by the rest of the community, but is a burden upon the family alone, being met by economies and increased labor by other members of the family. Most legislators and taxpayers have seen concrete instances of the economic loss to the family from the death of the wage earner and the sorrow and suffering which it entails. It is by no means difficult to enlist their sympathies and to stir them to action by showing how such sorrow and suffering may be prevented. But it is a very different and much more difficult task to make the taxpayer believe that the losses of the bereaved family will fall on him, or that new wealth will flow to him by preventing the death of other wage earners. If his city is to spend money for sanitary improvements he knows that he will have to pay the tax. It is difficult to persuade him that even though a hundred lives are thereby saved each year, he will be one whit the richer. Is it not as easy to persuade a city council to spend a half a million for a filter, for the simple reason that it will prevent a hundred deaths a year, as it is to persuade them that this half million investment will yield \$300,000 annually, of which tidy income each man will have his share. Most intelligent people suspect all schemes promising such excessive profits. Can we take the time to convince them of the genuineness of ours?

Let us turn now to the other view of the value to the community of the life of the worker as measured by the value of the product. Does not the wage earner believe that this value first appears as profits going to the employer of labor. No matter how generally this value may ultimately be distributed among the population, does not the wage earner feel that while that is no question about his paying his share of the tax imposed by sanitation, there is a good deal of doubt about his receiving any share in the profits? If he helps to save the lives of fellow-workers he may indeed see that more work will be done and more product result, but will he not feel that the product will go directly to the employer and not come to him? This brings us to another danger, which is likely to develop, if we insist too strenuously upon the cold-blooded method of calculating the value of life and health in terms of dollars and cents. The average wage earner, whether laborer or mechanic, believes in the law of supply and demand as affecting his wages. He sees that there is at most times and in most places, no marked dearth of labor. To most people it seems that there are more workers than jobs. It is easier to hire a man than it is to get a position. What will it avail our wage earners to increase their numbers by sanitation? It will take their money in taxes but how will they receive a return? Will not the increase in workers merely result in a decrease in wages, they may ask?

Now let us turn to the employers of labor, the class to which most of the large taxpayers belong. Do not they perhaps already hold to too great an extent the merely money view of the value of a human life. Are they not too prone to consider their employees as machines which yield them a profit and from which they strive to get the greatest possible product? In a very practical sense the value of a machine is measured by what it costs to replace it, not by the value of its products. It costs money to replace the machine of steel, but under present conditions it costs nothing, either to the employer or the community, to replace the machines of flesh and blood. New ones come to us from the ends of the earth and there is no interruption of the product. The employer usually finds no scarcity of labor. He is indeed rarely compelled to pay a bonus to procure employees. If there is need, in a short time help will come from Italy, from Syria, from Russia, and without cost to him or to the community in which he lives. The employer well knows that he must pay his share of the cost of better sanitation, and if he asks how and where he will receive into his pocket the pecuniary value of the lives to be saved, will we not have difficulty in instilling in him a living faith that his sanitary tax is a paying investment?

Under some circumstances the death of a human worker does mean a great and real financial loss. The experience of railroad and canal builders at Panama before the advent of Colonel Gorgas showed this. It was so evident that the federal government was willing to spend annually on a

population of about 60,000 a sum approaching \$2,000,000.* The canal will cost perhaps \$300,000,000. If it had not been for Colonel Gorgas' work it would doubtless cost double that amount, if it could be built at all. This was certainly a good financial investment. It was so because without it labor on the Isthmus would have cost double or treble what it does. Who believes that if Brockton, Erie, Fort Wayne, Jacksonville, Harrisburg and Pawtucket, with about the population of the Canal Zone, should spend \$2,000,000 annually on sanitation the benefits could be figured out in dollars and cents, and the taxpayers be made to feel that they individually would receive a money return for the expenditure.

Is it not probably true that one of the reasons why the community fails to be impressed by the startling financial loss attributed to the ravages of disease is that there is an instinctive feeling that from a money standpoint a human being is not a very valuable machine and that the replacement of one of these machines by another is not, under American conditions, a very serious drain on the community?

It is doubtless well that these estimates of the money value of life have been made. The message from the economists that the cost of prevention will be more than repaid is gladly heard by all broad-minded persons. Great numbers of people, however, look at these matters from a more personal standpoint. I would not defend these narrower viewpoints, some of which I have suggested in illustration, though they may not be wholly wrong, but I do believe that the broad statements as to losses by disease and gain through sanitation produce little impression on large numbers of persons. Let us not deal too long in glittering generalities. It is our duty as hygienists and health officers to be specific. We must measure more accurately the causes of disease; we must show more clearly the modes of prevention; we must demonstrate beyond question the efficiency of our methods; we must figure more carefully their cost and we must plan our expenditures so as to get the greatest possible results.

It is my belief that it is unwise to emphasize the financial side of the public health question in quite the way, or quite so much, as has been done of late. Life and health are cherished by all. It needs no argument to prove that it is good to be well and that it is wise to spend money for health. It is proper to consider cost in relation to results and financial savings, when such can be figured with accuracy, but there is much in the world which cannot be measured in terms of money, though to so measure it is doubtless the tendency of the age. Should we not place our profession on a higher level by resisting this tendency instead of yielding to it? Is it not dangerous to rely upon a balance sheet of life and death when there are so many chances of error in our calculations? Is it not enough to urge expenditures for the preservation of health because the happiness of mankind will be promoted thereby?

*The whole of this amount ought not properly to be charged to sanitation, but, as they stand, the official figures show an enormous profit from the sanitary work.