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THE BOOKKEEPING OF HUMANITY*

J. N. HURTY, Phar.D., M.D.

Secretary Indiana State Board of Health

INDIANAPOLIS

The accurate collection, tabulation and analysis of records of births, still-births, deaths, marriages, divorces, and sickness may be said to constitute the bookkeeping of humanity. The bookkeeping of dollars is very important, but of far greater importance is the bookkeeping of those events in the lives of human beings which are fundamental to an understanding of the movements of mankind, and which are also fundamental to the practical application of hygiene, to secure higher efficiency, longer duration of life and fuller measure of happiness.

Without vital statistics, a nation cannot know its vital latitude and longitude, its national time of day on the great ocean of time. Through vital statistics a nation is able to know its temperature and pulse, and follow and understand other vital functions. Or, again, its vital potentialities are reflected and comprehensively expressed in such statistics.

To live a successful life, a man must notice the symptoms which forecast his demise, that he may take action to neutralize them or to prepare for his end; and so should a nation carefully collect and keep such checks and balances that tell of increase or decrease in numbers, and causes affecting the same, and which tell the status of social conditions, so that the question of living or dying may be rationally considered. We have this illustrated in the case of France, where lately vital statistics disclosed the fact that the death-rate exceeded the birth-rate, thus forecasting, if the conditions continued, the demise of a great nation.

Human life in its beginning, its duration and ending, is the predominant consideration in all personal, social, state and national problems. The standing of a nation is finally to be measured by the standard of human lives.

No thoughtful person denies these facts. Yet, what a surprise it is, yes, a shock, to remember that we ignore in great degree these important matters. We do not fail to keep records of all legal procedures, of all commercial transactions, no matter how insignificant; we will deny ourselves needed rest and sleep to record a little or big real estate deal; we will keep careful minutes of a town meeting or of a social club; yet in many states a human being, made in the image of God and endowed with an immortal soul, can be born and can die without any public and frequently no private record of the fact. However, it is not so with animals and plants.

For them, elaborate systems record their birth, entire career and death. Every pedigreed calf, colt, dog, rooster, ram, and even cat, has its birth and death recorded; yet children, our hostages to fortune are born, and fathers and mothers die, without record. The National Government at the cost of millions annually maintains a Bureau of Animal Industry which looks after hog cholera, Texas fever and sheep rot, keeping accurate statistics; it also maintains at a cost of millions annually a Department of Agriculture, which collects crop statistics, beef, pork, poultry and mule statistics, but in not a single place in the whole country do we so accurately know the number of cases of diphtheria and the deaths from this cause among our babies. These conditions make one ask, "Is civilization a failure or has the Caucasian played out?"

IMPORTANCE OF VITAL STATISTICS TO THE INDIVIDUAL

Besides the general importance of vital statistics to a nation as a nation, they also have an importance of the greatest moment to the individual. For instance, by vital statistics must be determined the right to attend school, to enter certain occupations, to vote, to marry, to hold or to dispose of property, to employment by the state or country in military or civil service; responsibility for crime or misdemeanor; exemption from military or jury duty; qualifications or disqualifications for certain public offices; and privileges and immunities of a public nature; also private contracts in great variety, as in insurance and partnership. Indeed, there is hardly a relation from the cradle to the grave in which the evidence furnished by accurate vital statistics may not prove of the greatest individual and general, social or governmental value. The two great important events in the lives of men are birth and death; the alpha and omega, the beginning and the end. For a state not to make these events of accurate record for each individual is to neglect to keep abreast of practical civilization; yes, to be really civilized.

SANITARY VALUE OF VITAL STATISTICS

The public and individual value of vital statistics has been briefly set forth, but after all, their sanitary value is of greater importance. The value of the practical application to every-day life of the ounce of prevention, will hardly be disputed; and surely the prevention of disease constitutes the very crown of scientific medicine. The connection between the accurate registration of the existence of infectious diseases, of all deaths and the causes of death, and the practical prevention of disease, seems to be apparent. Whatever throws light on the causes of sickness and death, or whatever hastens or retards marriages or increases or decreases the number of births, must be helpful, yes, vitally necessary; but to be so, must have numerical treatment.

* Chairman's address before the Section on Preventive Medicine and Public Health of the American Medical Association, at the St. Louis Session, June 7-10, 1910.

Plainly, the capable health officer must have vital statistics at hand to be efficient in instituting such measures as are reasonable and necessary to prevent disease. The general must know the position, numbers, equipment and character of his enemy in order to carry on a successful battle. So for a successful fight the hygienist must have a like knowledge of his enemy.

EDUCATIONAL VALUE OF VITAL STATISTICS

Then there is the educational value of vital statistics. Need this point be dwelt on? Is it required to show how the relative destructiveness of the various diseases, the death-rates and sickness-rates from them, would educate the people to the necessity of action? The fact that the number of deaths from tuberculosis leads all the rest, the fact that pneumonia is the next greatest cause of death, and other life facts, are surely of the highest educational value. To convince and lead to action the keepers of the public purse so that the state can do her part in disease-prevention, vital statistics are absolutely essential. Surely, sanitary administration will be defective where vital statistics are wanting, and it will be efficient where they are accurate and complete. Low ideals of cleanliness and of health, accompanied by low ideals of morals, will exist to a greater degree where vital statistics are ignored than where they are accurately collected. Immediate records of births and deaths should be made, because experience teaches that an accurate record in all cases cannot or will not be secured unless reports are made forthwith and at once. The fact which should be given on birth and death certificates are now pretty well determined, and to the practitioner of medicine alone belongs the highly important duty, and also the privilege in cases of death, to render a correct statement of cause of death. The science of medicine, in the person of the medical attendant, is the only possible source of this knowledge which is fraught with such great importance to the family of the dead, to society at large and to medical science.

REPORTING INFECTIOUS DISEASES

Every parent naturally wishes to protect his household against disease, just as he would protect against the rending of wolves or the sting of serpents. To have this protection, the aid of the physician is necessary, and gladly should the aid be given. When the infection of scarlet fever or other transmissible disease appears in a household, it is indeed wicked for any person possessing the information not to lend his most efficient help to prevent its extension. A physician negligent in reporting an infectious disease which comes under his care, or negligent in warning and instructing the family in regard to the preventing of transmission to others, is an enemy to society, an enemy to himself and an enemy to the profession of medicine. More, he is a dangerous member of society and should be hunted down and brought to book as would a poisoner of wells, the assassin, or the incendiary. In reporting an infectious disease, that proper measures for control may be instituted, the physician not only renders a service to society, for which society might well pay, but he also renders help to his neighbors, he helps himself, he performs a Christian duty, he performs a service to scientific medicine and fulfills his Hippocratic oath.

If the patron asks a physician not to make public the fact that an infectious disease exists in his house that he may not be troubled with placard and quarantine, let the physician kindly and firmly, with proper exposition of the law and with gentle reminder of the Golden Rule,

give his absolute refusal. Let not the representative of the noble and learned profession of medicine for one instant enter into even the shadow of an act which is contrary to the statutory law and which opposes that divine rule of action, "Do unto others as you would have them do unto you."

As to compensation for service in reporting infectious diseases: The public can well afford to give compensation but in case it does not, still the duty of reporting and the honor of fulfilling the duty remain with the physician. We often hear quoted the clause of the Constitution which says in effect that all services rendered to the state shall be paid for; but let us look into this proposition. If required to return many data the physician should certainly be paid therefor, but for the return of the simple fact of the existence and location of an infectious disease, he is not altogether entitled to pay nor should he ask it. The right of the government to require that the physician be licensed need not be argued; the license system is desired by the profession. But what is a license? As regards infectious diseases the license is clearly granted to deal with this class of cases on the tacit understanding, first, that he has the diagnostic ability to recognize these cases when he sees them; second, that he will promptly give the state the benefit of his special knowledge.

The special duty of reporting infectious diseases, is, therefore, imposed when a license to practice medicine is asked for and granted. It has been argued in courts that the payment of fees for reporting the presence of infection would be as contrary to a proper public policy as to give fees for reporting a fire or for reporting a theft clearly seen in operation.

VALUE OF VITAL STATISTICS TO MEDICAL SCIENCE

Medical science, like all other sciences, must, for its development, have coordination of the facts, and numerical expression must be given. In the numerical relations of recoveries to deaths, in the numerical relations of the destructiveness of the various diseases, in the numerical relation of diseases and deaths compared with various age periods, in the numerical relations of sex, nationality, social condition and occupations and employments, scientific medicine finds much valuable material for her advancement. All of these relations and also other facts are supplied by vital statistics. Every true physician is in love with his profession; he would have it make all advancement possible and will always lend his aid and services to such end.

It follows then, that for the science he has adopted for his life work, if not in the service of his patients and if not in the service of society, he will gladly and eagerly contribute his part to vital statistics.

ACTUAL INSTANCES

Two actual instances showing the responsibility of physician to family in the matter of reporting births will probably serve a good purpose. A young man and wife came from Switzerland to Indiana. They were hardy, honest, and industrious, the very kind of people needed to make a nation. They settled in Switzerland County, probably being attracted by the name. In time a child, a girl, was born to them. The father was thrifty and intelligent and within three years became a foreman in a saw-mill. When his child was about two years old the father was accidentally killed by a log rolling over him. Time had not been sufficient for him to accumulate property. So the wife struggled with wash-tub and needle to support herself and child. One day the news

came that a brother of the father, the child's uncle in Switzerland, had left \$12,000 to the issue of his brother. Great was the rejoicing, which on account of the neglect of a physician to record the birth, was to become bitter sorrow. Before the Swiss government would turn over the property it must have proof that the little child was the issue of the dead man. As said, the physician had made no record and now he was dead. Neighbors know of the birth of the child but could not testify except as to their belief of the fatherhood. The testimony of the mother was not admissible in her own country for she could lead any child into court and declare any man to be its father. It was the physician's birth certificate made at the time of birth and presumably in the presence and by the authority of the father, that the law demanded. It could not be produced, and the helpless infant whom the physician should have been eager and happy to protect and serve, lost its inheritance. What a cruel and unnecessary blow was this, from the hand of a practitioner of the learned and benevolent science of medicine! Surely, a physician's duty to the families he serves and to the helpless infants he pilots into this world, are not fully performed until he has made out a certificate of birth and taken reasonable care that it is made of due legal record.

Another incident. Farmer Hadley, of Indiana, dying, left his valuable farm in trust to his unthrifty son, to go to his granddaughter on her twenty-first birthday. The girl had been told the date of her birth and always celebrated as her birthday the annual recurrence of the same. However, when she believed she was twenty-one, and then claimed her inheritance, her father denied her age, saying she was only nineteen. The family Bible was appealed to, but the leaf with the family record was gone. No birth record had been rendered, and the attending physician was dead. The court was in a quandary. A Solomon was needed for judgment. At last a neighbor remembered that a valuable cow belonging to the grandfather had given birth to a calf on the day the girl was born, and he could swear to it. Perhaps the grandfather had recorded the date of the birth of the calf. His farm books showed this to be the case. The date of the birth of the human being was established.

SUMMARY—CONCLUSIONS

The importance of vital statistics to the family, to the state, and to medicine, can hardly be overestimated. The physician, the representative of the science of medicine, is, except in instances, the only member of society who can supply information in regard to causes of deaths and the presence of infectious diseases. As it is of very great importance to the family that its births, deaths, and cases of infectious diseases be legally recorded, and as the family presumably pays for the physician's services, the physician, therefore, should not consider his services fully performed nor that he is entitled to his fee until the certificates which are of such great importance are duly made. And again, the physician should remember when reporting vital statistics, that he is giving obedience to the statutes of his state, on which he depends for protection; that he is protecting the helpless; that he is doing a general good, and that he is serving the science of medicine.

ABSTRACT OF DISCUSSION

DR. PRINCE A. MORROW, New York: The subject is most important, but attention should be called to the fact that there is a large and important class of diseases which are infectious, and dangerous to the public health, but which are practically ignored in our system of vital statistics.

In few of our vital statistics is there mention made of deaths from gonococcus infection, or from syphilis. Now, we all know that these diseases figure very largely as causes of death, for instance, in England and Wales, during the year 1907 there were 1,840 deaths recorded from syphilis. Dr. Osler, in commenting on this statement, says that if we are to appreciate the importance of syphilis among the deadly maladies, we must include the deaths from paresis, and locomotor ataxia, half at least of the deaths from softening of the brain; and other diseases of the nervous system. He estimates that at least 6,000 or 7,000 are annually slain every year in England and Wales by syphilis directly.

Now, this list of 6,000 or 7,000 deaths does not embrace the vast number of still-born children dead from syphilis. He says, in addition to this, if we include in this category the deaths from the coccus of Neisser we shall find that there should be debited to the venereal diseases many thousands of deaths annually—a mortality that comes only after tuberculosis, pneumonia and cancer.

Another point is that in the presence of any infectious disease the cardinal obligation of the physician is to prevent the extension of the disease, and the infection of others, but in the case of syphilis the only duty of the physician, as he understands it, is to cover up and conceal the fact—to protect the secret of his patient. He does not seem to consider it a part of his duty to protect the other members of the household or the public from this very infectious disease. As Dr. Hurty intimated, we can never educate the public in this disease unless we tell the truth. The public has no conception of the enormous extent to which these diseases prevail.

The medical profession has not recognized its obligations to the public in this regard; and if a reform in vital statistics is to be instituted, I know of no one who is better qualified and who is more likely to inaugurate this innovation than the very able and courageous secretary of the Indiana State Board of Health.

DR. ARTHUR R. REYNOLDS, Chicago: Dr. Hurty's paper is most timely and should be placed in the hands of every physician throughout the country. I have always believed that it was the duty of all physicians to report cases of contagious diseases as well as births. They owe it to the public in return for privileges they enjoy. I think that most physicians think so, too; but often they neglect it, and sometimes assert that they should be paid for it. The pathetic instances and forcible illustrations that Dr. Hurty has given show that the duty is binding on us all.

DR. P. M. TOWNSEND, Marshalltown, Ia.: I attended a charity patient with a neglected case of chancroid—gonorrhea and syphilis—one of the worst cases that I ever handled. The girl was unmarried, and pregnant; and all summer I dreaded the decision as to what my duty was in regard to protecting other physicians. Knowing that the family was poor and that there would be no financial inducement for the physician to undertake the risk, I feared to report the case to the other physicians in the county, lest they might refuse to attend the case when the girl came to the time of confinement. Before I had decided what my duty was toward my fellow practitioners, the girl miscarried and called for a physician, and the secretary of the county association attended her. Later on I learned that a woman who was present at the time, and had to administer the anesthetic, knowing something of the neighborhood gossip in regard to the case, wanted to know if there was any danger of her "getting anything," and thus called the physician's attention to the possibility. Up to that time he had examined the patient without uncovering her person, but he then, in very great exasperation, having looked at the skin and external genitalia, scarred by the chancroids, said that if he had known what kind of a case it was he would not have attended it for a hundred dollars. We need more publicity in regard to venereal diseases, for our protection as well as for the protection of the public.

DR. HENRY B. HEMENWAY, Evanston, Ill.: Certain diseases like smallpox are common-law nuisances; in other words, the courts have decided that they are nuisances, and therefore reportable. Most diseases are not common-law nuisances. For example, malaria should properly be reported; but it is not a

common-law nuisance, and so legally it can hardly be required to be reported unless the statutes specifically mention it. If gonorrhea and syphilis are to be reported (and I do not for one second question the advisability of it), the statutes of the state should definitely mention those diseases. The ruling of the board of health is always subject to the court action; and a court uneducated in matters of medicine must take the opinion of one physician as legally as good as that of another. Therefore the ruling of boards of health is liable at any time to be nullified by a court decision. Statistics, in order to be accurate, must be complete. Many physicians imagine that they may be compelled to report a case of scarlet fever, or possibly typhoid fever; but they take it that disclosing the presence of the gonococcus or syphilis in a patient, would be betraying professional confidence. That provision should be covered by a state legislative enactment.

DR. PRINCE A. MORROW, New York: The law in New York state is mandatory that all diseases which are infectious and dangerous to the public health should be reported.

DR. HENRY B. HEMENWAY, Evanston, Ill.: That expression "infectious" must be passed on by the court. Although malaria, for example, is infectious, and we know that it is infectious, there are many physicians who deny its infectiousness to-day; and therefore if we attempted to require the reporting of malaria, we might find that the court would decide against us.

DR. J. N. HURTY, Indianapolis: Of course, there is no doubt about the desirability of reporting the malarial diseases. That they will be reported eventually I have no doubt. But to secure reports of them at present seems to me to present insurmountable difficulties. We cannot yet obtain perfect reports of those diseases that the people think should be reported. The existence of scarlet fever is sometimes hidden. Until people understand their duty to their neighbors, how can we secure the reporting of malaria?

Of course, my conviction is that it is the duty of the physician from every point of view, to report vital statistics.

One of our most prominent gynecologists, a cultivated man, educated at Harvard College, and the Harvard Medical School, contended that he should be paid for reporting a birth. That contention indicates a very serious situation, it seems to me. When the matter so particularly concerns, or may concern the material welfare, of his patient and the child, and the physician is the only man who can do it, I would say that he might just as well at a birth leave the placenta *in situ* as not to report its occurrence, because until he has attended to both matters he has not completed his work. Let him complete his work: then let him have his pay.

Fully recovered, 151; not reported, 195; died, 91; one arm affected, 21; one leg, 53; side, 7; both arms, 4; both legs, 61; all extremities, 24; trunk, 10; face, 4.

Dr. W. H. Wilson, state health inspector, visited the chief centers and saw many of the cases. I quote as follows from a letter received from him April 25, 1910:

There were something like 275 cases reported to this office but from what I know of the situation, having been out much over the field, I am satisfied that there must have been at least three times this number of cases and perhaps more. The death record is practically complete, inasmuch as death certificates must be filed before burial permits are issued. I find that 137 deaths are recorded in which the cause is given as poliomyelitis, spinal paralysis and cerebrospinal meningitis, but they are manifestly all belonging to the same class. Making an analysis of the first eighty cases reported I find that in seventy-two of these the duration of the disease was from one to five days, about three days being the average. In eight cases the time preceding death was from ten to fifteen days. No patient over 20 years of age. . . . As to the patients who have completely recovered I have no data of any degree of accuracy except on eighty cases, and of these as near as I can learn 75 per cent. have completely recovered.

In my investigation the chief purpose was to determine the variety of the disease. The following points were covered in a letter of inquiry addressed to physicians:

1. Total number of cases.
2. Total number of fatal cases.
3. Clinical varieties as follows: (a) cerebral type, (b) bulbar type, (c) polyneuritic type, (d) ordinary type. (By cerebral type, I mean cases with high fever, delirium, convulsions, rigidity of neck or opisthotonos, when after one or more days these symptoms subside to be followed by paralysis; by bulbar type cases indicating paralysis in the medulla, as evidenced by disturbance chiefly in the breathing; by neuritic type, cases with a great deal of hyperesthesia and severe pains in the extremities; by ordinary type, cases beginning with fever, vomiting, diarrhea or constipation, to be followed sooner or later by paralysis.)
4. Cases of complete recovery without paralysis.
5. Parts paralyzed in cases of recovery with paralysis.
6. Age of patient.

The following-named physicians have reported to me, and I wish to acknowledge my sense of appreciation for their courtesy:

From Polk County, Drs. Shaw, Malster, Anderson, Post, Woepfel; York County, Drs. Hallett, Hylton, Shidler, Stark, Karrer, McKinley, Demeree; Dawson County, Drs. Sayer, Wengert; Custer County, Drs. Sargent, Comstock; Valley County, Drs. Bartoo, Lee; Nance County, Drs. Johnson, Eastman, Ohanerl; Merrick County, Drs. Benton, Robinson; Seward County, Dr. Doty; Webster County, Dr. Wegman; Dodge County, Drs. Davis, McDonald, Smith, Heyne; Nemaha County, Dr. Dillon; Saline County, Dr. Bentz; Phelps County, Dr. Sanders; Hitchcock County, Dr. Mellea; Douglas County, containing the cities of Omaha and South Omaha, Florence, Benson and Dundee, Drs. Gilmore, Porter, Ellis, Adams, Wigton, Rix, Rosewater, Lake, Bishop, Morrison, Jefferson, Mack, Somers, Swanson, J. C. Moore, R. C. Moore, Impey, McClanaghan, Brown, Dwyer, Loomis, Van Camp.

Reports from the counties were as follows:

County.	Population.	Cases.
Polk	12,000	384
York	19,000	130
Valley	8,000	90
Custer	20,000	82
Douglas	175,000	79
Nance	9,000	72
Webster	12,000	43
Dawson	13,000	41
Seward	16,000	25

A BRIEF REPORT OF THE NEBRASKA EPIDEMIC OF POLIOMYELITIS*

H. M. McCLANAHAN, M.D.
OMAHA

This epidemic occurred during the summer of 1909. In proportion to the population it was greatly more extensive than the epidemic in New York City of 1907. My report is based on personal letters received from fifty-eight physicians, a number of whom I have seen personally. I have been greatly aided by Drs. H. W. Orr and W. H. Wilson of Lincoln, Nebraska, and hereby acknowledge my appreciation of their courtesy. Dr. Orr investigated the epidemic with a view to determining chiefly the nature and extent of the resulting paralysis. His paper was recently read before the American Orthopedic Society. Dr. Orr wrote directly to the people and received replies from 213 families, reporting on 345 cases. The total number of cases reported to him was 619. A brief summary is as follows:

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.