A Survey of Public Health Conditions in South Carolina

BY

DONALD McLEAN MCDONALD

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For Superintendents, Principals, and High School Teachers
A Survey of Public Health Conditions in South Carolina

BY

DONALD McLEAN McDONALD

EXTENSION DIVISION
UNIVERSITY OF SOUTH CAROLINA
1925
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Foreword

The failure to think what we ought to think, to do what we ought to do comes largely from the lack of information.

This principle is particularly applicable to public health. That nearly one-third of the children born in South Carolina die before reaching the age of six years, that it costs a man from six to seven years of his life to live under our public health conditions, that in some counties there is only one doctor to every 7,500 inhabitants, and that our hospital facilities are entirely inadequate, are alarming facts. But that we have not taken intelligent action because these facts are not generally known is more than alarming. It is pathetic.

To supply this information is the purpose of this bulletin.

S. M. Derrick,
Department of Rural Social Science.
A SURVEY OF PUBLIC HEALTH CONDITIONS IN SOUTH CAROLINA

Donald McLean McDonald

I.

1.—Preliminary.

The problem of public health is among the most important which confront modern society. The health of a people determines their educational, industrial and social efficiency. The moral and religious life are profoundly influenced by public health conditions. Good health does not necessarily guarantee a life of happiness and contentment but ill health does deny such a life. An understanding and an appreciation of health conditions is essential to the permanent improvement of the economic, social, educational and moral life of any community.

The following study is an attempt to gauge public health conditions in South Carolina and to offer some suggestions for improvement. The data which forms the basis of this investigation was taken from the reports and records of the following agencies: the Federal Bureau of the Census, the South Carolina Board of Health, the American Medical Directory, the American College of Surgeons, public health nurses, voluntary health organizations and questionnaires.

2.—Data.

There were certain problems connected with the available data that have handicapped the investigation. Although these problems will not materially affect the general conclusions they will in a measure influence certain specific results, consequently they must be continually borne in mind.

The first problem is that of the unreliability of the data. This is most pronounced in the data given by the
reports of the Bureau of Vital Statistics of the State Board of Health and of hospitals.

The law requiring that all births and deaths be reported had been in operation only five years when the data used in this investigation was collected. There were no field agents to enforce the law. Since its operation was intrusted to local registrars it necessarily suffered the fate of all new laws of state wide character which must be enforced by local authorities. Some registrars were faithful while others were careless or indifferent. There was some indifference toward the law on the part of doctors. Furthermore the large number of ignorant midwives among the negroes and the fact that so many negroes die without calling a physician makes it certain that many births and deaths never came to the attention of the registrars. It is therefore necessary to accept with reservation the reports that come from rural areas and those sections having a large negro population.

In the case of the hospitals the problem is different and the difficulty greater. Most of the hospitals in South Carolina are of less than fifty beds capacity. No standard has yet been worked out for hospitals of this capacity. Again, no adequate official survey has ever been made of the hospitals of the state. No records are easily available. Questionnaires were sent during the investigation but only a small percentage of hospitals replied. Personal investigation of some of those that did reply revealed conditions very different from those indicated in the answers to the questionnaires.

A very surprising fact which came to light in the investigation was that there was not to be found an accurate list of the hospitals in the state. Several partial lists were found. Inquiries addressed to persons acquainted with the various sections of the state brought to light others. From these two sources, what is believed to be an accurate list has been compiled.
Another difficulty arose when we came to deal with the county death rates for the various diseases and the rates for these same diseases in the states. For county comparisons it was necessary to compute the death rates from the records of the Bureau of Vital Statistics of the State Board of Health. For state comparisons the rates came from the department of vital statistics of the Federal Bureau of the Census. From the records of the state bureau only the death certificates signed by physicians were available. The Federal bureau reports all deaths regardless of the source from which the certificates come. There are therefore two standards for comparing death rates, one for the counties and one for the states. The use of two standards will not affect the results of the investigation since individual counties in the state will not be compared with other states. For South Carolina both rates are used, the Federal rate for comparing South Carolina with other states and the state rate for comparing the counties with the state.
II. Conditions.

1.—Birth Rates. (1920 Reports)

A. General Rates.—According to the census of 1920 the negro race comprised 51.4 per cent of the total population of South Carolina. There is no marked difference between the white and negro races as to birth rates but there is sufficient difference to affect the general rating of a state or county. The general rate will gravitate toward the rate of the race having the largest proportion of the population. It is therefore essential for the proper understanding of conditions that the general rates, the white rates and the negro rates be given. Real conditions however are disclosed by the race rates.

Of the twenty-three states comprising the registration area in 1920, South Carolina ranked fourth highest. North Carolina, Utah and Virginia had higher rates.

The total rate for the registration area was 23.7 births for each thousand population while the rate for South Carolina was 28.6 births per thousand population.

In rates for the white race South Carolina stood third, being outranked by North Carolina and Utah. The rate for this state was decidedly higher than that of the registration area. The rate for the area was 23.5 while the rate for South Carolina was 28.8.

In the case of the colored races this state ranked sixth. Washington, California, Utah, North Carolina and Virginia had higher colored rates. The rates for colored races include those of the Japanese, Chinese, Indian and Negro. It is therefore impossible to determine just where the far western states rank with respect to the negro. There is an element of uncertainty in comparing colored rates in South Carolina and those in the registration area. The ratio of negroes to the other races in this state, other than the white race, is 2,000 to 1 while the ratio for the area is 24 to 1. It will thus be seen
that the rate for the colored races in this state is in fact the negro rate. While the negro ratio among the colored races of the area is not anything like so great as in South Carolina it is large enough to make the colored rates for the area approximately the negro rates for the area.

In 1920 the colored rate for the area was 27 births for each thousand inhabitants. The rate for this state was 27.7 births per thousand inhabitants.

Comparing the rates for the white and colored races we find that for the registration area the colored races have a rate 3.5 per thousand higher than the white race, but the white race in South Carolina has a rate 1.1 per thousand higher than the colored races.

B. Urban and Rural Rates.—In urban birth rates South Carolina stands third, being outranked by North Carolina and Utah. In urban birth rates for the white race the state ranks first but the showing is not so good for the urban negro rates. Seven other states outrank this state in urban negro birth rates.

North Carolina, Utah and Virginia have higher rural birth rates than South Carolina. According to races South Carolina ranks fourth for the white race and ninth for the negro race.

The differences between the urban and rural birth rates are so slight that they are practically negligible. The white race has a difference of 1.3 births per thousand inhabitants in favor of the city while the negro race has a difference of 2.5 per thousand in favor of the rural areas.

In view of the fact that 82.5 per cent of the population of this state is rural and the major portion of the hospital facilities of the state are concentrated in the six cities that comprise the urban area, the probability is that many of the white mothers from the rural sec-
tions bear their children in these hospitals, thus giving the urban rate only an apparent lead over the rural rate for the white race.

The uniformity between the urban and rural birth rates disappears when the various cities comprising the urban portion and the counties comprising the rural portion of the state are studied. Surprising differences are evident.

B1. Urban.—Between the six cities themselves there are remarkable differences. Anderson has a total birth rate of 50.2 per thousand population, or more than twice the rate for the area, and 22.0 per thousand more than the rate for the state. Charleston has a total rate of 22.8 per thousand population, which is 0.9 per thousand less than the rate for the area and 5.4 per thousand less than the rate for the state. Greenville and Spartanburg both have rates that are less than the total rate for the state. Columbia and Florence have rates that are a good bit higher than the rate for the state.

There is a marked difference in the rates for the white and colored races in two of these cities. Anderson has a difference of 14 per thousand in favor of the white race. Spartanburg has a difference of 13 per thousand in favor of the white race. Columbia and Florence have rates slightly higher for the colored races. Charleston and Greenville have rates somewhat higher for the white race.

B2. County Rates.—The rates for the counties show nearly as great differences as those for the cities. They range from 16.7 births per thousand inhabitants for Saluda county to 37.4 for Horry. Twenty-two counties have rates that are higher than the average for the state. The county rates are so much lower in their range than the city rates that considerable doubt is thrown on the accuracy of the reports from these counties. This is especially true of Saluda county. Richland and
Charleston counties have very low rates, but the proximity of hospital facilities in Columbia and Charleston would apparently account for these low rates. Columbia’s high rate of 34.8 per thousand would indicate that the city is credited with a part of the county rates. In the case of Charleston, the already low rate for the city would indicate only a small absorption from the county. Seventeen counties have higher rates for the negroes than for the white race. The difference is greatest in Calhoun county where the rates are 42.6 per thousand for the negro race and 15.1 for the white race. With one exception the counties with a higher negro rate are located in the central and southeastern portion of the state.

C. Illegitimacy.—A very distressing situation is disclosed by the study of the birth rates, i.e., the large amount of illegitimacy in the state. South Carolina has a rate of 80.3 illegitimate births for every thousand children born; 19.6 for every thousand white children born and 140.5 for every thousand negro children born. The District of Columbia ranks next with approximately 60.0 illegitimate children for every thousand births. North Carolina has a rate of 50.3 illegitimates per thousand births; 17.2 for whites and 127.8 for negroes. The rate for the registration area is 22.7 for all races; 14.2 for whites and 125.6 for the colored races.

South Carolina’s large negro population has a decided influence on the general rate but not sufficient to produce an alibi for the state, for a comparison of the race rates shows that this state ranks highest in the number of illegitimate births for both races.

A large number of illegitimate births indicate a condition that presents some of the most serious problems with which the public health worker has to deal.

The first and most evident problem is that of venereal disease. A high rate of illegitimacy indicates a high de-
degree of illicit sexual intercourse, which in turn indicates a high degree of venereal infection.

One factor that may lessen the probability of venereal disease among the negro race is the attitude of a large number of negroes toward marriage. Many negro men and women live in the practical relation of man and wife without being married. Their children are illegitimate and so rated but they are not subject to the dangers of venereal infection that are found in the case of promiscuity.

While it should be borne in mind that a high illegitimate birth rate indicates a high degree of illicit sexual relation, it does not necessarily follow that a low rate for illegitimate births indicates a low degree of illicit sexual relationship. The extent of the knowledge of birth control methods would play a large part in determining the ratios between illicit sex practices and illegitimacy.

A careful survey of the educational, social, medical and other factors involved would indicate that there is relatively a small amount of birth control knowledge in the state—especially among the low country negroes.

The most serious problem from the public health point of view is that of the conditions under which the illegitimate child must be reared. The social stigma of illegitimacy and the lack of the care of a responsible father makes impossible the home life that is necessary for the proper physical, mental and moral development. The capacity of the institutions accepting this class of children is very limited. The future of the more than 6,000 illegitimate children born in this state each year is anything but hopeful. The solution of this problem can be accomplished only by the combined action of the religious, moral, educational and public health agencies of the various communities.
A. General Death Rates.—Of the twenty-three states comprising the registration area South Carolina ranks nineteenth for the total death rate. When the total rate is analyzed into race rates the relative position of the state is decidedly changed. In the white death rate the state is tenth in rank, being surpassed only by Nebraska, Washington, Minnesota, Kentucky, North Carolina, Wisconsin, Virginia and Utah. In colored death rates the state takes fourth place, being surpassed only by North Carolina, New Hampshire and Vermont. The positions of New Hampshire and Vermont have little significance as these states have a colored population of only 758 and 557 respectively. In comparisons of real significance South Carolina would rank second only to North Carolina.

The classification of states according to death rates has only a relative value in determining health conditions. Other factors may so complicate the situation that a state with a low death rate may have worse conditions from a public health point of view than a state with a high death rate. Among these complicating conditions may be the difference in the hazard of life in the occupations of the people, the period of life in which the higher death rate occurs, the climatic and geologic conditions that prevail, and the character of the population.

Considering the dangers involved in occupation it is evident that South Carolina ranks low in this respect. Most of the state is rural in the strict sense of the word. With the exception of the railroads there is no dangerous occupation of an extensive character.

On the other hand probably no state in the Union has a more healthful climate. The winters are never excessively cold nor are the summers oppressively hot, and there are no eccentricities of temperature that cause a
strain on the physical vigor of the people. The climate is such that the people can live out of doors most of the year.

The geologic and soil conditions are such that, with the exception of iron and coal, the state could be independent. Ample supplies of all the varieties of food necessary for a balanced ration and all the clothing necessary can be produced in this state without excessive effort. Very little of the state is too rolling for productive farming and with the exception of the eastern portion of the state, the country is sufficiently rolling to provide naturally the drainage necessary for healthful living. In the eastern portion much can be accomplished by artificial drainage.

Furthermore, the people of South Carolina are mostly native born and are thoroughly acclimated to the conditions that prevail. If the law of adaptation has any significance it should certainly lower the death rates in South Carolina.

In the face of these conditions South Carolina has no excuse for ranking below the highest in births and above the lowest in deaths. All the states are a great distance from the ideal goal in public health endeavor and accomplishments, but with her natural advantages it is evident that this state is not even keeping abreast of other states.

During the five year period 1916 to 1920 the death rate for the registration area showed a continuous decline with the exception of the year 1918. The influenza epidemic complicated matters that year. During the same period the death rate for South Carolina maintained practically the same level, the rate for the year 1920 being slightly higher than that for 1916. In 1916 South Carolina had a rate slightly below that of the area, but the following year the rate for the area dropped
below that of South Carolina and continued so for the remainder of the period.

The fact should not be overlooked however that 1916 was the first year of the operation of the law requiring all births and deaths in this state to be reported. The probability is that the law was being more fully complied with in each succeeding year from 1916 to 1920 and that the apparent level in the death rate was due to this cause. There was in all probability a continuous decrease in the actual death rate in this state.

B. Rural and Urban Rates.—South Carolina ranks highest in urban death rates and fifteenth in rural death rates. In death rates for the races this state stands highest for both races while it ranks ninth in rural white rates and fourth in rural negro rates. South Carolina ranks first among the Southern states in both white and negro rates but not in total rural rates.

An interesting and significant fact is disclosed by comparison of the rural and urban rates for the area and the corresponding rates for this state. In the area there is little difference between the rates for the rural and the urban sections. In South Carolina there is a marked difference. The urban sections of the state have a total rate nearly twice that of the rural. That which is true of the total rate is true of both the white and negro rates.

Between the cities comprising the urban portions of the state there are found considerable differences in the death rates. In a general way the same conditions exist with respect to the death rate that we found existing in the case of the birth rates. Greenville had the lowest death rate, 14.7 per thousand population, while Columbia had the highest, 34.0 per thousand population. All the cities had higher death rates for the negro than for the white race. The difference was greatest in Colum-
Bia, where it was 15.9 per thousand, and Anderson, where it was 14.2 per thousand population.

Every city in the state had a higher death rate than the average rate for the cities in the area. The rate for the urban section of this state was 10.2 per thousand population higher than the urban rate for the area. The rates for Greenville and Spartanburg were only slightly higher than the rate for the area, but the rate for Columbia was nearly two and a half times that of the area. The fact that the State Hospital for the Insane, the Penitentiary and the Confederate Home are located in Columbia accounts for a large part of this city’s high death rate. Apparently Spartanburg and Greenville are about on the average in public health conditions while the other cities of the state are below the average.

A comparison of rates for births and deaths indicates that one city, Charleston, is losing ground on the total rate. This city had only 97 births for each 100 deaths. Anderson showed the highest gain, with 207 births for each 100 deaths. The rates for Columbia and Florence are about the same for both births and deaths.

In the rates for the races the negro death rate is higher than the birth rate in Charleston, Columbia, Florence and Spartanburg. The white race showed gains in every city. The least gains for the white race were made in Florence and Columbia, while the greatest gains were made in Anderson, Spartanburg and Greenville. In a general way conditions seem to be more favorable from the public health point of view in the Piedmont section of the state and less favorable as the coast section is approached.

The counties of the state show variations in the birth and death rates which are relatively as great as those of the cities. None of the counties, however, has as high birth or death rates as the cities.
The difference in the general range of birth and death rates between the cities and counties are probably due to several causes. The fact that many births and deaths which should be credited to the rural sections occur at hospitals in the cities would account for a part of the difference. The greater danger to life and the influence of economic and social conditions would have a large effect on the rates. It is also highly probable that the records for the cities are much more accurate than those for the counties.

The rural death rates range from 8.8 per thousand population in Colleton county to 21.8 per thousand population in Beaufort county. The rate for Colleton county is 4.2 per thousand population lower than the rural rate for the state and 3.5 per thousand population lower than the rural rate for the area. The rate for Beaufort county is 8.9 per thousand population higher than the rate for the state and 9.6 per thousand population higher than the rural rate for the area. As a rule the coastal counties of the state have a higher death rate than the Piedmont counties. This is due in part to the larger negro population of the coastal counties. In only two counties are the negro death rates lower than those of the white race. In Union county the negro death rate is 8.5 per thousand population while the white rate is 8.7 per thousand. In Fairfield county the negro death rate is 11.8 per thousand inhabitants and the white rate is 13.9 per thousand. In McCormick county the rates are the same. In all other counties the death rates are higher for the negro than for the white race.

In one county the negro rate is three times as high as the white rate. In five counties the negro rate is more than twice that of the white rate. In seven counties the negro rate is from 75 per cent to 100 per cent higher than the white rate. Eleven counties have a negro rate more than 50 per cent higher than the white race.
and nine counties have a rate more than 25 per cent higher for the negro race.

There does not seem to be any general sectional difference in the white rates. Thirty-five counties have white rates that are lower than the average white rate for the state. Forty-two counties have rates that are lower than the white rate for the area.

In the case of the negro race there is a general higher rate in the coastal counties than in the Piedmont section. Generally speaking the negro rate is also higher in those counties having a large negro population. The conditions that produce a lower rate for the white race seem also to affect the negro death rate in proportion as the white race is predominant in the population. Sixteen counties have a higher negro death rate than the negro rate for the state. Forty counties have lower rates for the negro than the colored rates for the area.

Births and Deaths Compared.—Comparing death rates with birth rates we find that all the counties show a net gain in population. The gain was least in Charleston county where there were 121 births to each 100 deaths. The greatest gain was in Union county where there were 300 births to each 100 deaths. The ratio for the state was 201 births for each 100 deaths against a ratio for the area of 180 births for each 100 deaths. In every county except Fairfield the gain for the white race was greater than for the negro. The proportion of births to deaths is much greater for the white race in the state than for the negro. The white race is but slightly more prolific than the negro but the fact that the white race has a decidedly lower death rate gives that race a much larger net gain. In no county is the negro absolutely losing ground, but in every county except one he is relatively losing ground.

Average Age of Those Dying.—A comparison of the average age of those dying in South Carolina with that
of the area results unfavorably for South Carolina. The average age for the area was approximately 42.4 years for all races. The average length of life for all races in South Carolina was 31.7 years. For the white race the average age was 43.1 for the area and 36 for South Carolina. The colored race fared much worse in both the area and in South Carolina. The average age of those dying among the colored races in the area was 33.7 years while in South Carolina it was 29 years. It is thus evident that the white man in South Carolina pays a penalty of seven years of his life, and the negro nearly five years of his for living under the public health conditions that prevail here.

C. Specific Death Rates. (1920 Reports).—We shall consider first the class of diseases known as the general diseases. This class includes the diseases that are communicable, certain diseases whose specific cause is unknown, such as cancer and pellagra and a few that are functional or organic, such as diabetes. This class of diseases most truly indicates the public health conditions prevailing in any state or community because their origin, means of prevention and cure are in most cases known. The death rate from these diseases furnishes a safe index for determining the extent to which the people of a state are applying the knowledge and means of disease prevention that are available.

An examination of the records shows that 32.8 per cent of all the deaths in South Carolina are due to the general diseases while only 29.1 per cent of the deaths in the registration area are due to this class of diseases. These figures indicate that public health conditions are far from ideal in the area and worse in South Carolina.

It is impossible to tell just how the various counties and cities of the state rank with respect to this class of diseases. Separate records for the various counties are kept for certain of the diseases that compose this class.
These will be considered when the specific diseases are dealt with. No records for the entire class are kept for the various counties.

With respect to the nervous diseases South Carolina ranks more favorably. 7.5 per cent of all deaths in the state are due to diseases of this class while 9.5 per cent of all deaths in the area are due to the same causes. The rates are 123 per 100,000 population for the area and 105 per 100,000 population for South Carolina.

Passing rapidly over the other classes of diseases the percentages of all deaths are: circulatory diseases, area 14.5 per cent, South Carolina 9 per cent; respiratory diseases, area 12.4 per cent, South Carolina 9.6 per cent; digestive diseases, area 8.7 per cent, South Carolina 9.7 per cent; genito-urinary diseases, area 7.9 per cent, South Carolina 7 per cent.

In these classes of diseases South Carolina is on or above the average for the area. This apparently favorable position of the state with respect to these classes of diseases may and probably does have an adverse significance. These classes include the so-called degenerative diseases and the diseases of old age. As public health conditions improve and the preventable diseases are eliminated the death rates for the diseases of old age must increase. In a general way a comparatively low rate for these diseases indicates that the people of a state are not reaching the age periods of which these diseases are characteristic.

There is a further consideration that must be borne in mind in dealing with the degenerative diseases. The total death rates from them should cause no alarm so far as these diseases themselves are concerned. The total rates however should be analyzed into age periods. Facts of public health significance may or may not then occur. If the analysis shows that the toll from these diseases is being taken in advanced old age there is noth-
ing to be concerned about. If however it is disclosed that a material percentage of the deaths from these diseases occur in early old age, middle life or late youth there is evidently something wrong with the conditions and manner of life of the people.

Dealing more specifically with the two classes of degenerative diseases that are most characteristic of old age we find that 9 per cent of all deaths in South Carolina and 14.5 per cent of all deaths in the area are due to the disease of the circulation. The death rate for South Carolina is 134 per 100,000 population and for the area 188.5.

Analyzing these rates into age periods we find deaths from this class of diseases at all ages. In the area, however, the percentage is not marked until we reach the 49 year period. After that the percentages climb rapidly, reaching their maximum during the 70-79 year period. In this state the percentages begin a marked climb during the 20-29 year period. The rates in this state continue above those of the area until the 60-69 year period when the area percentage takes the lead.

The county records show that Colleton, Hampton, Berkeley and Dillon counties have the lowest rate. Colleton has a significantly low rate. As a rule the county rates run fairly high. Only sixteen counties have a rate lower than 125 per 100,000 population, while only eight counties have a rate below 100 per 100,000 population. The county rates cannot be compared with the rates for the area and other states because the county rates were computed on the basis of physicians' reports, while the area and state rates were computed on the basis of all reports.

In the case of the genito-urinary diseases the rates are not as high as for the circulatory diseases. 7.9 per cent of all deaths in the area and 7 per cent of all deaths in this state are caused by this class of diseases. The rates
are 89.8 per 100,000 population for the area and 83.8 per 100,000 population for South Carolina.

An analysis of the deaths into age periods shows practically the same results for the state and area as were found in the age period analysis of the circulatory diseases.

The counties showing lowest rates were Chesterfield, Horry, Jasper, Lexington, Marion, McCormick, Saluda and Union.

We come now to deal with conditions that are not only most significant but that touch the deepest and tenderest relations of human life—the conditions with respect to motherhood and infancy.

Two and four-tenths per cent of all deaths in South Carolina are due to puerperal causes; 1.4 per cent of the deaths of the area are due to these causes. Five hundred and eighty-three mothers in South Carolina perished in giving birth to their children. This is a distressingly high rate when we remember that it is confined to one class—the married,—one sex,—the female,—one age period, that of child bearing,—and one condition, pregnancy.

The diseases of early infancy are premature birth, marasmus, congenital debility, accidents at birth, atrophy and such; 9.7 per cent of all deaths in South Carolina and 5.3 per cent of all deaths in the area are due to these causes. Approximately 5 per cent of all children born in South Carolina die from diseases of this class.

The infancy death rates include the rate for diseases other than those of early infancy. The distinction between death rates for infancy and early infancy must be kept in mind.

Comparing births and infant deaths in South Carolina we find that there are 116 deaths of children under one year of age for every 1,000 births—the highest ratio in the area. The area has 86 deaths of children under
one year of age for each 1,000 births. South Carolina’s ratio of deaths under one year of age to each 1,000 births is 12 per cent higher than that of Maryland, the next state in rank, and 35 per cent higher than North Carolina.

The ratios for the cities in this state range from 94 deaths under one year of age to each 1,000 births in Anderson to 209 deaths for each 1,000 births in Charleston. In every case the negro rate was the higher. This rate ranged from 107 deaths per 1,000 births in Anderson to 350 deaths per 1,000 births in Charleston.

The county rates range from 48 deaths per 1,000 births in Colleton County to 194 deaths per 1,000 births in Charleston. In every county the negro rate was markedly higher than the white rate, except in Dillon, Lee, McCormick and Union where the rates were nearly the same, and Fairfield where the negro rate was lower than the white rate.

Thirty-two and eight-tenths per cent of all who die in South Carolina are children under five years of age. For the area only 21.7 per cent of all deaths occur during the first five years.

Examining the rates for the various classes of disease we find the following percentages of all deaths from these diseases occurring during the first five years: general diseases, South Carolina 25.4 per cent, area, 16.8; nervous diseases, South Carolina 10.7 per cent, area, 6.7 per cent; circulatory diseases, South Carolina 1.5 per cent, area, 1.3 per cent; respiratory diseases, South Carolina 41.3 per cent, area, 31 per cent; digestive diseases, South Carolina 67.6 per cent, area, 48.3 per cent; genito-urinary diseases, South Carolina 2.8 per cent, area, 1.8 per cent; external causes (accidents), South Carolina, 19.7 per cent, area, 10.8 per cent.

South Carolina makes a very unfavorable showing compared with the area in the proportion of deaths dur-
ing the first five year period from general diseases, the nervous diseases, the respiratory diseases, diseases of the intestinal tract and accidents. These diseases are mostly preventable and the conditions causing them remediable.

The proportion of deaths from external causes should not pass unnoticed, though this class of deaths has very slight relation to the public health problem. Five and six-tenths per cent of all the deaths in the state and 6.7 per cent of all the deaths in the area are due to these causes. A very large part of these deaths were due to homicide, suicide, and preventable accidents. The chief significance of this class of deaths is that they reveal an amazing degree of indifference to the value of human life.

*Tuberculosis and Cancer.*—Before concluding the study of conditions revealed by the causes of death there are two specific diseases that should be noticed—tuberculosis and cancer. Both of these diseases were included in the class of general diseases but they are so important in a consideration of the public health that they deserve special attention.

Tuberculosis ranks 4th as a cause of death in South Carolina. Its worst ravages are among the negroes but owing to the nature of the disease and the economic and social conditions that prevail in South Carolina racial lines mean very little in the prevention and control of the disease. From the negro consumptive through the nurse, cook, maid or wash woman to the white family, or from the white consumptive through the same channel to the negro family is an inviting highway for the disease to travel to and fro between the races.

Tuberculosis is the cause of 8.7 per cent of all the deaths in the area and 8.5 per cent of all the deaths in South Carolina. The rate for the area was 114.2 per 100,000 population, South Carolina had a rate of 120 per 100,000 population or 7.8 per 100,000 popula-
tion higher than the area. The rate for the white race in the state was 65.5 per 100,000 population. The negro rate was 172 per 100,000 population or nearly three times as great as the white rate.

It is estimated that there were approximately sixteen thousand cases of tuberculosis in the state in 1920.

The rates for the various counties range from 10.13 deaths per 100,000 population in Jasper County to 227.1 per 100,000 population in Greenville County. The rate for Greenville County was considerably affected by the deaths at the United States Public Service Hospital, which is located there. Chester, Clarendon, Colleton, Horry, Marion and Beaufort counties have unusually low death rates. The rates for these counties were computed from reports made by physicians only. The distribution of doctors in these counties and certain other factors involved indicate that the death rates in these counties are much higher.

The distribution of deaths into age periods shows that 38 per cent of all deaths from tuberculosis in South Carolina occur in the 20-29 year group. In the area 26.4 per cent of all deaths from tuberculosis occur during the same period. 70.2 per cent of all deaths from tuberculosis in South Carolina are in the 20-50 year period. Furthermore, 29.2 per cent of death from all causes occurring in the 20-29 year age period in South Carolina are due to tuberculosis.

A comparison of the death rates from tuberculosis for the five year period 1916-1920 shows that there has been a steady decline in the death rate in this state during that period. During the same period the death rate from tuberculosis in the area showed a greater decline. The rate of decline for South Carolina was more consistent, however, than the rate of decline for the area. The death rate from tuberculosis in South Carolina fell more
rapidly in the case of the negro than of the white race during the five year period.

It has been conclusively proven that when intelligently dealt with tuberculosis is both preventable and curable. The most serious charge that can be brought against public health conditions in the state as well as the area is the fact that a disease which is both preventable and curable continues to take such heavy toll in life and health, and that, principally from that portion of the population which is of most social and economic importance.

Cancer is one of the most baffling problems confronting the medical profession and public health workers. Practically nothing is known as to its cause. It appears to be to some degree preventable and curable if properly treated in time.

Cancer causes 6.4 per cent of all the deaths in the area but only 2.3 per cent of all the deaths in South Carolina. The death rate for South Carolina is 32.9 per 100,000 population. South Carolina it will be seen has much less cancer than the average for the area.

During the five year period 1916-1920 there was a slight increase in the cancer death rate for the area. The rate for South Carolina remained practically stationary.

The various counties of the state show very great differences in the death rates for cancer. Union, Kershaw, Jasper, Horry, Colleton, Clarendon, Berkeley and Bamberg have remarkably low rates. On the other hand Charleston, Georgetown, Greenville, Richland, Spartanburg and York have comparatively high rates.

Feeblemindedness.—During the year 1921 the National Committee on Mental Hygiene upon the invitation of the proper state authorities made a mental hygiene survey of the state.

The significant findings of this survey for the public health were as follows: Two and eight-tenths per cent
of the white school children and 4.2 per cent of the negro pupils were feebleminded. Applying these figures to the entire school population in the first six grades it appears that there are 13,000 defective individuals.

Feeblemindedness was found to be almost twice as frequent in rural as in urban communities.

Eight and six-tenths per cent of the white inmates and 9.8 per cent of the negro inmates of the Penitentiary were insane. Approximately 13.5 per cent of the inmates of the Penitentiary were feebleminded—5.2 of the white inmates and 18.2 per cent of the negroes.

D. School Examinations.—No intensive survey that could be carried to the individuals of the state for determining the physical condition of the people has been made. The nearest approach to such an investigation is the school examination.

Recently the law has been enacted requiring regular examinations of all school children. It is too early yet to get results. However, school examinations have been reported from certain sections and the findings are significant.

In four schools in Greenville county 356 pupils were examined. Of this number 287 were found to have physical defects. Defective tonsils and adenoids were most prevalent, though many defective teeth were found.

Of 3580 children examined in the Columbia schools in the fall of 1921, 1838 defects were found.

During the year 1921 inspectors working under the Department of Rural Sanitation of the State Board of Health examined 13,155 school children and found 6,951 children suffering from 7,499 defects.

The Report of the Bureau of Child Hygiene of the State Board of Health for 1921 shows that during the year 30,948 children were inspected by that department; 14,877 were found to be suffering from 25,788 defects—the majority of defects being bad teeth.
Because of the wide range from which these figures were taken it would be reasonably safe to conclude that approximately 50 per cent of the school children of South Carolina are suffering from remediable physical defects. Most of these defects are due to diseased tonsils and teeth.

Recent medical research has discovered the fact that many of the ills of later life can be traced to defective teeth and tonsils in youth. With approximately one-half the children now suffering from defects, largely of these two classes, it takes no stretch of the imagination to tell what the harvest of ill health will be later unless something is done to remedy this condition.

Before drawing our conclusion from this study of conditions there are three factors entering into the life of a people that have a bearing on existent conditions and the possibility of remedial measures which must be considered. These are educational conditions, economic conditions and the prevailing attitude toward the general public welfare.

For the highest degree of physical welfare a thorough knowledge of the principles of hygiene, sanitation, proper bodily food and care and of disease prevention is essential. Such knowledge and a low educational standard are incompatible. Educational conditions in South Carolina, judged according to surveys that have been made, are largely responsible for public health conditions that exist. The educational situation also makes it more difficult to institute remedial measures.

Economic conditions are favorable to the public health as has previously been shown.

The general attitude of the public, even of the educated part of it, toward the public welfare is in a very sluggish state. The best educated and leading thinkers of the state are arousing themselves, however, to the re-
sponsibilities of the people to the public welfare and the future is more hopeful.

E. Conclusions. First.—There is considerable evidence that the law requiring the registration of all births and deaths is not being fully obeyed.

Second.—The high rate of deaths from controllable and preventable causes and the early age at which the diseases of degeneracy begin to be marked as a cause of death indicate that ignorance of the fundamental laws of sanitation, hygiene and disease prevention is widespread. Conditions among the negroes are evidently bad.

Third.—The high death rate of children under five years of age, and especially of children under one year of age is appalling. A survey of the diseases that take such heavy toll of the child life makes it clearly evident that much of this high death rate could be eliminated by the proper prenatal and post-natal care of the mothers and child. Ignorance is the disguised murderer that is slaying such a large number of the babies of this state.

Fourth.—From the data available we must conclude that fully half the children who do not succumb to the diseases that lurk in the trail of ignorance in the first years of life, go on into life maimed by these same diseases or other conditions due to ignorance and later in life pay the penalty in suffering, lowered economic and social efficiency and premature deaths.

Fifth.—There is an extensive amount of ignorance among the adult citizens of our state as to the care of their own bodies. This ignorance results in premature suffering and death.

Sixth.—There is urgent need for a widespread and thorough going campaign of mental and physical health education. This campaign should arouse the people to the conditions that exist, make them see that these con-
ditions are remediable, that the remedy can come only through concerted private conduct and public action and that every day such conditions are not remedied the state is paying a heavy toll of life.

Along with this campaign should go a campaign of education in personal hygiene and public sanitation, the principles of right living and the principles and methods of disease prevention.

Seventh.—The campaign cannot be carried on by the public health officials of the state, counties and towns alone. They must blaze the way, present the facts and be the chief engineers, but the intelligent citizens of the state through clubs and other organizations and in their public and private relationships, the schools and every agency and individual looking to the public welfare must actively enlist themselves in this campaign.
III. Distribution of Doctors in South Carolina.

The availability of competent doctors is a large factor in the public health problem. Where there are few doctors the knowledge of disease prevention and treatment is usually very limited. Although he does not always measure up to his duty and privilege in either field, the doctor, from the very nature of the case, should be the chief exponent of the principles of preventive and curative medicine. There is a reciprocal relationship between the ratio of doctors to inhabitants and the extent of the knowledge of the principles of sanitation and hygiene in any community. The community will demand the physician's services in proportion as it possesses knowledge of disease prevention and cure. This demand will attract physicians in proportion to its strength. The doctor, on the other hand, cannot practice medicine in any community without disseminating a certain amount of knowledge pertaining to health matters, and if he is public-spirited, he may become a benefactor of the first rank by educating the people in disease prevention and cure.

Not only is there a direct relationship between the ratio of doctors to inhabitants and public health conditions in any community but the larger the proportion of actively practicing doctors, the higher will be the degree of specialization and the consequent better services.

1.—General Conditions.

Comparing the various counties we find a very wide difference in the proportion of doctors to inhabitants. Greenville county has the most favorable rank with one doctor to each 770 inhabitants, while Berkeley county's rank is most unfavorable with one doctor to every 7,519 inhabitants. The average for the entire state is one doctor to every 1,201 inhabitants.
A similar condition exists in the number of square miles to each doctor in the various counties. Colleton county has the most favorable rank with one doctor for every six square miles of territory while Berkeley county has the most unfavorable rank with one doctor for every 413 square miles. The average for the state is one doctor for every 21.4 square miles of territory.

Only a relative significance can be attached to the ratio of doctors to inhabitants. As a result of inquiries during this investigation it was disclosed that many doctors in the state were engaged in other occupations and were giving only a small amount of time to the practice of medicine. It was impossible, within the limits of this investigation, to determine to what extent the doctors in the various counties were engaged in other occupations.

2.—Rural and Urban Ratios.

An inspection of the ratio of doctors to inhabitants discloses that the urban conditions are far more favorable than the rural.

In cities of ten thousand inhabitants or more Anderson had the most favorable ratio; one doctor to every 267 inhabitants, while Charleston had the most unfavorable ratio, one doctor to every 693 inhabitants. The average urban ratio was one doctor to every 443 inhabitants.

In towns of 2,500 to 10,000 inhabitants Lancaster's ratio of one doctor to every 303 inhabitants was most favorable while York had the most unfavorable ratio, one doctor to every 682 inhabitants. The average ratio was one doctor to every 412 inhabitants,—not very different from the average for cities of 10,000 inhabitants or more.

The rural rates range from one doctor to every 932 inhabitants in Hampton county to one doctor to every
7,519 inhabitants in Berkeley county. The average for the state is one doctor for every 1,912 inhabitants. The cities and towns of more than 2,500 inhabitants have more than four and a half times as many doctors in proportion to the population as the rural areas.

The cities of 10,000 or more population have 10.4 per cent of all the inhabitants in the state and 28.8 per cent of the doctors. The towns of 2,500 to 10,000 population have 7.1 per cent of the total population of the state and 20.6 per cent of the doctors. The total urban population comprises 17.5 per cent of the entire population of the state but 49.4 per cent of all the doctors are located in these urban centers.

3.—White and Negro Doctors.

There are so few negro doctors in the state that they hardly justify a special consideration. The negro race comprises 51 per cent of the total population of the state. The negro physicians comprise only 4.5 per cent of the total number of doctors. The ratio of white doctors to white inhabitants is 1 to 616 while that of negro doctors to negro inhabitants is 1 to 14,069. Of the white inhabitants 78.4 per cent are rural while only 52.3 per cent of the white doctors are rural. The average rural ratio is one white doctor to every 922 white inhabitants. Eighty-six and six-tenths per cent of the negro population is rural but only 11.2 per cent of the negro doctors are rural. The rural negro ratio is one negro doctor to every 107,830 inhabitants.

4.—Conclusions.

A. The rural areas are as a rule very poorly provided with medical service. It appears that there are rural sections of this state where no medical service is available.
B. The negro race is almost without medical service from doctors of its own kind. Especially is this true in the rural areas where most of the negroes live. It is true that the white doctors are generous in attending the sick of the negro race but there cannot be the same interest in the treatment and health education of a people where there are no racial affinities and congenialities. Furthermore the economic condition of such large numbers of negroes is so precarious that they cannot afford the services of physicians.

C. Some means must be provided whereby competent medical services are available to all the people of every section of the state. If the people are not able to provide for this themselves then the state and county should make such provision through County Health Units, Community Doctors, or the endowment of medical services for the needy.

D. The State and County Medical Associations should adopt a vigorous campaign of public health education.

E. There should be a concerted effort on the part of the medical profession, public health and social agencies to build up a health attitude in the public toward the proper use of the medical profession. The public must be taught to demand the counsels of the family physician and specialist in disease prevention and his services in disease cure.

F. The medical profession is deficient in its attitude toward disease prevention and public health education. The doctor must become an apostle of disease prevention rather than disease cure.

G. Too many doctors are making their profession a side issue. The present status of medical science is such that to be efficient a doctor must devote his entire time to his profession. There should be an attitude on the part of the medical profession and the public demanding that doctors devote themselves to their professions.
IV. Hospitals.

Dr. D. A. Craig, Associate Director of the American College of Surgeons, says, "The basic principle of our public health work is the prolongation of human life and the increasing of human efficiency. Consequently no public health work can hope to attain the maximum of success which does not have in co-operation with it the medical profession and hospitals. You might as well try to run a railroad without a department of repair and a department of research as to run a public health campaign without a hospital."

The hospital situation in South Carolina presents one of the most serious of all the problems with which the public health worker has to deal. The thoroughly unsatisfactory character of the hospital situation will disclose itself as we proceed.

1.—Standardization.

Before any real progress can be made in clearing up the conditions that prevail it will be necessary to have some standard by which to judge the various hospitals.

The American College of Surgeons has worked out a very satisfactory standard of requirements for general hospitals of fifty beds capacity or more. As a result of this effort at standardization for the large hospitals great progress has been made in improving conditions in the larger hospitals. The minimum standard requirements are attached.

No standard has been worked out for hospitals of less than fifty beds capacity. The American College of Surgeons and various hospital associations are giving this question a thorough study but thus far have reached no satisfactory conclusions. Consequently every hospital of less than fifty beds capacity is a law unto itself
and the character of the service it renders is determined very largely by the character of those in charge and their ideals.

Of the fourteen hospitals of more than fifty beds capacity in South Carolina, seven had become standardized general hospitals prior to January 1, 1923. Three of the seven had been given only probationary rating as standard hospitals but have since become fully approved according to the statement of officials of the state hospital association. It is thus evident that previous to January 1, 1923, only fifty per cent of the larger hospitals in the state were doing a class of work that could be approved by the American College of Surgeons. Some if not all of the other larger hospitals are reorganizing their work and broadening their activities in order that they may become standardized hospitals.

Four of the seven standardized hospitals are public hospitals. Five of the fourteen general hospitals in the state of more than fifty beds capacity are public hospitals. It appears that there is a stronger desire among public hospitals to become standardized than among private ones. This may be partly due to the fact that there are usually a larger number of doctors associated with a public hospital than with private ones. The public hospital is usually better provided with funds for equipment and has a more dependable source of support than the private institution.

2.—HOSPITAL CONTROL.

Of the general hospitals in the state nine are public and forty privately controlled, excluding the army and navy hospitals. Of the public hospitals only two are for negro patients, however provision is made for the care of negro patients in private hospitals by some of the counties.
The services of the private hospital to the community are very much more limited than those of the public hospital unless the private hospital is very heavily endowed. Private hospitals must depend on contributions from benevolent persons or the fees of patients or both for their support. The result is meager funds for operation, or exorbitant fees or more probably both. This very decidedly limits the field of services to the community.

3.—Distribution.

Twenty-eight of the forty-nine general hospitals in the state are located in the six largest cities. These twenty-eight hospitals contain 1,557 of the 2,339 beds in all the general hospitals. Considering the accessibility of these hospitals from the standpoint of distance, public attitude and the economic factors we find that 66 per cent of the bed capacity of the general hospitals of the state is practically limited to 30 per cent of the population. Ninety-three per cent of the bed capacity of the public general hospitals is located in these six cities.

Of the bed capacity of these hospitals 2,137 beds are for the white race and 202 beds are for negroes. There are 55 beds in public general hospitals for negroes and 862 beds for white patients.

There are 732 inhabitants in the state for every bed in a general hospital, and 1,866 inhabitants for every bed in a public general hospital. If all the maternity cases in the state were handled by the hospitals, and each case kept in the hospital for two weeks every bed in the general hospitals would be occupied for forty weeks of the year by maternity cases alone.

Distributing the beds according to race there are 392 white persons to every hospital bed in white general hospitals and 4,321 negroes for each negro hospital bed. There are 974 white people in the state for each bed in
a public white general hospital and 15,859 negroes to every bed in a negro public hospital.

If we distinguish still further we find that in the area of hospital accessibility for the six largest cities there are 392 inhabitants to each hospital bed while for the rest of the state there are 1,522 inhabitants for each general hospital bed.

4.—EXPENSES.

One of the most serious problems with respect to hospitals is that of the fees for the care of patients. In response to questionnaires thirteen hospitals replied giving their rates. The rates given were for board and ordinary nursing service alone. In addition to these must be added laboratory, operating room, special nurse and medical fees. The rates range from $12.00 to $50.00 per week. One hospital had a minimum rate as low as $12.00 per week, four hospitals had rates as low as $14.00 minimum while the rest ranged from a minimum of $17.50 per week upward.

5.—NURSES TRAINING SCHOOLS.

All of the larger hospitals in the state and several of the smaller ones have nurses’ training schools. The situation with respect to these nurses’ training schools is so uncertain and involved that it was impossible within the limits of this investigation to get a satisfactory insight into the situation. There is no satisfactory standard for nurses’ training applied in this state. The whole question of a nurse’s equipment seems to revolve around the ability of the nurse to pass the state nurse’s examination for registration. There is no uniformity in educational requirements, none in the number of patients or beds in a hospital and the number of different diseases handled and none for the number of hours of class
room work given to the various subjects. The result is a chaotic situation for which the suffering public must pay.

It is impossible without a standard to tell just what sort of nurse each hospital is turning out. The standardized general hospitals have training schools that are apparently doing work of high character and turning out well equipped nurses. Some of the smaller hospitals and some of the special hospitals are turning out nurses without sufficient clinical experience or classroom work. It seems needless to say that from the very nature of the case the smaller hospital cannot furnish the clinical material nor teaching staff for complete nurses' training.

6.—SPECIAL HOSPITALS.

A. Insane.—The State Hospital for the Insane is located in Columbia. It has a capacity of 2,450 patients of all races. As a matter of fact the hospital is caring for 3,000 patients.

B. Feebleminded.—There is only one institution for the feebleminded in the state. The capacity of this institution is 103 beds. According to the figures of the Mental Hygiene Survey of the state there are 10,000 feebleminded persons in the state.

C. Tuberculosis Sanatoria.—There are five sanatoria for the treatment of tuberculosis in the state. One of these with a capacity of 20 beds is a private, endowed institution. Three are semi-private and one is a public institution. There are 153 beds for white patients and 53 beds for negroes. The semi-private institutions are operated by tuberculosis associations.

There are approximately 16,000 cases of tuberculosis in the state each year, at least one-half of whom need sanatorium care. The length of stay for these cases should be from three months to three years.
7.—Conclusions.

A. The general hospital situation in the state needs to be cleared up by a program of standardization and an official survey of each hospital.

B. There is urgent need for a larger number of standardized general hospitals, especially in the rural sections.

C. The present arrangement of fees is bad. The wealthy are able to provide for themselves; the very poor are cared for by charity or county poor relief, but the self-respecting middle class is to a large extent excluded from adequate hospital care.

D. There is an urgent need for standardization of the nurses training schools. Those with sufficient clinical material to do standard work should be thoroughly equipped and required to measure up to a high standard of work. The smaller training schools without adequate equipment and material should be co-ordinated with the larger ones, the nurse getting what she can in the smaller school and completing her training in the larger school, or else the smaller schools should be eliminated.

E. There should be a comprehensive state hospital program. The state should be divided into districts of such size that all persons in the district would be in easy reach of the hospital. A thoroughly standardized hospital supported by the public should be established in each county or district. These hospitals should be equipped with an out-patient department, clinics and hospital social workers, who are thoroughly trained and competent. These hospitals should be supported by public funds and operated on such a financial basis that any person in the county or district needing treatment can procure such at a rate in accordance with his ability to pay.
V. The State Board of Health.

1.—DUTIES.

The State Board of Health is the principal agency for combating disease and improving public health conditions in the state. It is the official institution of the state for dealing with public health matters and all other agencies operating for the improvement of the public health either have an organic relation to and operate under its general control or maintain a close cooperation with it. In considering the work of the State Board of Health it is necessary to consider first its:

CONSTITUTION.

"The South Carolina Medical Association, and their successors, in their corporate capacity, together with the Attorney and Comptroller General of the State, and their successors in office, are a Board of Health for the State of South Carolina, to be known as the State Board of Health. Said board is invested with all the rights and charged with all the duties pertaining to organizations of like character, and shall be the sole advisor of the State in all questions involving the protection of the public health within its limits.

"The said Association, at its first meeting after the first of January, 1893, and every seven years thereafter, shall elect seven members, to be recommended by the Governor, who shall appoint them to cooperate with the State officers named above, to constitute an executive committee, having power to act in the intervals of the meeting of the State Board of Health. This committee shall make, annually, a detailed report to the State Board of Health. Members of this committee shall be removable by and at the pleasure of the Governor, upon the request of the State Board of Health, or for neglect of
duty, or other causes set forth by the majority of the members of the Executive Committee. Vacancies shall be filled by appointment by the Governor, on recommendation of the State Board of Health or of the Executive Committee when such vacancies occur in the intervals of the meeting of the Association.

"The Executive Committee shall, immediately after the appointment, proceed to organize by electing a Chairman and Secretary, the latter to be ex-officio Registrar-General of the State. They are authorized and empowered to divide the State into health districts, and in those districts in which no Boards of Health exist, they are required to appoint Sub-Boards of Health, which shall consist of two practicing physicians and one layman. Local Boards of Health established as hereinafter provided, shall be subject to the supervisory and advisory control of the Board of Health, through its Executive Committee."

DUTIES.

"The Board shall make an annual report to the legislature on all matters relating to its action. It shall be the duty of the State Board of Health through its representatives, to investigate the causes, character and means of preventing such epidemic and endemic diseases as the state is liable to suffer from; the influence of climate, location and occupation, habits, drainage, scavengering, water supply, heating and ventilation; shall make inspections annually, or oftener if necessary, of the sanitary conditions of all institutions provided as state charities or supported at the public expense. They shall supervise and control the quarantine system of the State."
AGENCIES.

1. The State Health Officer.—"Upon the approval of this Act the Governor shall, upon the recommendation of the Executive Committee of the State Board of Health, appoint a State Health Officer, who shall be a graduate of a reputable medical college and a physician.

It shall be the duty of the State Health Officer when it is deemed necessary by the municipal officers of any town or city, or the County Board of Commissioners of any County, to visit cities, towns, villages or localities where disease is prevalent, or threatened, and to investigate and advise with the local authorities or persons as to such measures as may tend to prevent the spread of disease, or to remove or abate causes that may tend, cause or intensify disease, and to advise when practicable or possible, as to measures of sanitation and hygiene, and to investigate and advise as to all matters as to food or water supply, sewerage or drainage, or as to ventilation or heating or lighting, or other measures connected with public sanitation or safety. Provided nothing herein contained shall be construed to conflict with the present law providing for periodic examination of city water supplies.

"The State Health Officer shall be secretary of the Executive Committee of the State Board of Health. He shall be the custodian of the books, papers, instruments or appliances belonging to the State Board of Health, or that may be intrusted to his care. He shall summons the Board to meetings, and shall attend all meetings of the Board and discharge the duties appertaining to the office of Secretary."

2.—Organization.

The Board of Health was organized in 1878. That year the legislature appropriated the sum of $2,000 to
carry on the work of the Department. No material progress was made in the scope of the organization for many years. Much good work was done, however, in a limited way.

As late as 1907 the financial statements show that the Secretary was paid a salary of $41.55 per month by the State. In 1909 the laboratory was organized. The report for 1910 shows that the staff of the Board of Health consisted of the Health Officer, a Director of Laboratories, Chemist, two stenographers and a janitor.

In July, 1910, the Department of Rural Sanitation was added. A Director and two assistants were appointed. The workers in this department were paid by the Rockefeller Foundation.

In 1915 the State Sanatorium was also established for the treatment of those suffering from tuberculosis.

In 1919 the Department of Child Hygiene and Department of Venereal Disease Control were established. The position of State Sanitary Engineer was also established that year.

In 1920 a State Sanitary Inspector of Hotels and Restaurants was added to the staff of the State Board of Health. In this year also a demonstration in malarial control was made jointly by a cooperative agreement entered into with the United States Public Health Service and the International Health Board.

In the annual report of the State Board of Health for 1921 the report of the State Epidemiologist first makes its appearance.

In 1922 because of lack of appropriation from the State Legislature the Department of Venereal Disease Control ceased to operate.

The annual report of the State Board of Health for 1922 shows an organization composed of:
General Officers—

Executive Officer of the State Board of Health, the Assistant State Health Officer, Epidemiologist, State Sanitary Engineer, Hotel Inspector, Bookkeeper, stenographer and janitor.

Departments—

Laboratory.—Officer in charge, Bacteriologist, Technicain, stenographer and chemist.

Malarial Control.—Engineers, Field Agent, two sanitary inspectors, stenographer.

Bureau of Child Hygiene.—Director, Secretary, Secretary to Nursing Staff, Statistical clerk, two District Supervisors, Maternity and Infancy Supervisor, three Field Nurses.

Vital Statistics.—Assistant State Registrar, File Clerk, Stenographer and Index Clerk.

Rural Sanitation.—Director, Secretary, seven County Health Officers, four County Health Nurses, four County Inspectors, two County Stenographers.

Sanatorium for Tuberculosis.—Superintendent, Assistant physician, matron, two graduate nurses, pupil nurses.—Palmetto Sanatorium, housekeeper, two nurses.

3.—ACTIVITIES. (1922 Report)

The survey of the activities of the State Board of Health is based on the Report of the Board of Health for 1922.

1. Epidemiologist.—The report of the epidemiologist shows that during the year he made ninety-one visits to communities in various sections of the state. His adventures included diagnosing and quarantining cases of infectious diseases, enforcing the state quarantine laws, investigating the sources of infection in typhoid fever, organizing local Boards of Health, and making addresses
on health subjects to schools, club meetings and public gatherings.

2. **Sanitary Engineer.**—The term sanitary engineer literally describes the activities of this agent of the public health. His duties cover water and sewerage inspection and installation, inspection of the sanitary condition of the common carriers, inspection of the sanitary conditions of State Institutions and other problems that arise with respect to sanitary conditions in the state.

3. **Hotel Inspector.**—The report of the hotel inspector shows that during the year he visited 101 towns and inspected and rated 174 hotels. These ratings are published and the cards displayed in hotels for inspection by the public.

4. **Laboratory Department:**
   
   A. **Hygiene Laboratory.**—This laboratory is located in the basement of LeConte College, the University of South Carolina. It is manned by four workers. During the year 27,628 diagnostic tests were made at the laboratory. Of these 15,873 were Wasserman tests for syphilis with 14 per cent positive; 7,008 Widal tests were made for typhoid fever with 17 per cent positive; 537 blood specimens examined for malaria with 5 per cent positive; 568 animal brains were examined for rabies and 45 per cent were found positive; 1,481 tests were made for tuberculosis with 22 per cent positive.

   Sixty-nine thousand four hundred and twenty-six ampoules of typhoid vaccine were sent out; seven hundred and sixty-nine persons were given the Pasteur treatment for rabies, persons treated for rabies in every county in the state except two.

   B. **Chemist and Bacteriologist.**—The report shows that 177 analyses were made of water from 49 cities and towns in the state.

5. **Malarial Control.**—This department is in the hands of five workers. During the year work that had been
previously begun was continued at eight towns and new work was begun in five towns. Preliminary surveys were made in 18 towns. The report shows that where work has been carried on for some time the prevalence of malaria has been reduced from 50 per cent to 99 per cent in spite of the fact that 1922 was a bad malarial year. Six towns showed a reduction in malarial prevalence of 90 per cent or more as a result of control work.

6. Bureau of Child Hygiene.—This department is in charge of a director who has general control of the work. There are two district supervisors who have charge or supervision over all county nurses, community nurses, Metropolitan nurses and industrial nurses who affiliate with the bureau.

A consultant pediatrician is attached to the staff. He lectures, writes bulletins on the hygiene of maternity and infancy, writes newspaper articles, and outlines letters to be written to mothers and expectant mothers.

The consultant nurse for maternity and infancy work supervises the instruction of midwives through the field nurses and conducts educational propaganda pertaining to maternity.

Two field nurses promote the maternity and infancy program through midwifery classes, baby campaigns, lectures and home visitation.

The negro field nurse conducts a public health nursing campaign among the negroes of the state.

There are also a statistical clerk and two secretaries.

Under this department there were thirty nursing services with forty-seven nurses on duty.

The report shows that during the year there were 39,340 nursing visits made; 30,172 school children inspected; 1,026 health talks made to 15,990 school children; 290 talks were made to 16,841 persons at public meetings; 303 home nursing classes were held with an
UNIVERSITY EXTENSION DIVISION

attendance of 3,215; 503 midwives were given instruction and 24,295 pieces of literature were distributed.

7. Bureau of Rural Sanitation and County Health Work.—The personnel of this department consists of a director, an office secretary, ten county health officers, four county nurses, four county inspectors and two county stenographers.

This department carried on programs in eighteen counties during the year. Seven counties, Charleston, Orangeburg, Darlington, Fairfield, Newberry, Greenville and Cherokee had full time health officers. The other eleven counties had work done in them ranging from two weeks to two months. Three counties had hookworm surveys and free treatment for those infected.

A comparative study of morbidity and mortality rates for typhoid and intestinal diseases shows that the counties having full time health officers have a much lower rate than others.

During the year, in these 18 counties 390 public health talks were made to 22,276 people; 502 health talks were made to 20,000 school children and 14,293 visits were made to homes; 33,357 pieces of health literature were distributed.

This department has a moving picture outfit for educational work. It was in operation only a part of the year but during that time health pictures were shown to 84 audiences with an approximate attendance of 16,623 people.

Four hundred and twenty-five homes were screened, and 1,174 homes sanitised. 13,155 school children were examined, of whom 6,951 were found to be defective; 3,368 persons were examined for hookworm, 642 found positive and 503 treated; 587 persons were examined for tuberculosis; 95 cases of typhoid were investigated and 18,448 typhoid inoculations were given; 87 children were operated upon at tonsil and adenoid clinics. In the
free dental clinics 1,769 children had their teeth examined and cleaned; 368 had teeth extracted and 287 had teeth filled.

8. **Bureau of Vital Statistics.**—The work of this bureau is done by the assistant state registrar, a file clerk, an index clerk and a stenographer. This department is the public health bookkeeping department for the state. In the data here collected is to be found an index to the conditions prevailing in the various sections of the state. Here, also, is to be found the results of the activities of the public health agencies.

The various counties of the state are divided into registration districts. In each district is a registrar appointed for the purpose of procuring accurate reports of all births and deaths with such data as is essential to the public health. The law requires that physicians or others in attendance at every birth or death make a complete report to the registrar. The local registrar then forwards the report to the Bureau of Vital Statistics where it is indexed and classified according to race, age, sex, occupation, county and month. If it is a death certificate it is also classified according to disease. An exact duplicate of the certificate must also be made and forwarded to the Federal Bureau of the Census in Washington.

More than 43,000 birth certificates and 20,000 death certificates are handled by this department each year. In addition to this the department makes comparative studies of conditions prevailing in the state and is required to furnish the needed data to the other departments of the State Board of Health or other agencies making studies. This department also has the task of seeing that the law requiring the registration of births and deaths is complied with.

9. **Tuberculosis Sanatorium.**—The State Sanatorium for the treatment of tuberculosis is under the control of
the Board of Health. The sanatorium is in charge of a superintendent, an assistant physician, a matron, a housekeeper, four graduate nurses and pupil nurses.

During the year 124 white persons and 68 negroes were treated. There were 57 beds at the white camp and 21 at the negro. Sixty-seven patients were discharged, of whom 9 were apparently arrested, 7 quiescent and 30 improved. These were all white. From the negro sanatorium 47 patients were discharged. Two were apparently arrested, one quiescent and eight improved.

4.—CONCLUSIONS.

A. The Board of Health has shown a rapid development during the past fifteen years.

It is today doing a splendid piece of work for improving public health conditions in this state but there are certain respects in which the work should be enlarged and made more efficient.

B. There should be a department of research and public health education. At present there seems to be no balanced, concerted educational program. Each department apparently is doing its own educational work largely independent of the other departments. This proposed department should study the health conditions prevailing in the state and carry on a systematic, thoroughgoing educational campaign, informing the people of such conditions and pointing out methods of correcting them.

This educational campaign should be extended to all parts of the state through:

a. A state wide weekly press service.

b. Lectures and addresses to clubs and public meetings.
c. Special bulletins on the various problems of public health. There should be an extensive state wide mailing list of citizens to whom these bulletins should be mailed.

d. A monthly general health bulletin, mailed to all the citizens of the state who desire it, and to all the schools and colleges.

e. Posters and placards.

C. A bureau of tuberculosis should be established. This disease ranks fourth as a cause of death in this state. It is due to a specific infection. It must be dealt with by specific methods. There is need for a department devoting its whole attention to this one cause of human suffering.

D. There is urgent need for a more thorough inspection of the sanitary conditions of railway cars and stations and street cars. Railway toilets are frequently not only unsanitary but repulsive. The laws against spitting on street cars, and other public places, is not being fully enforced.

D. The work of malarial control has so completely demonstrated its worth that it should be rapidly extended to all parts of the state suffering from this disease.

E. The State Board of Health should have some sort of relationship, supervisory or otherwise, with the hospitals of the state. At present the Board of Health does not possess an accurate record of the hospitals in the state. Institutions that deal in matters of life and death should be under the control of some responsible official body and the Board of Health seems to be the logical agency for handling the present situation.

F. Since 82.5 per cent of the population of South Carolina is rural, and the scarcity of rural medical facilities so serious, and the extent of ignorance as to mat-
ters of disease prevention and cure so great, the work of the Bureaus of Rural Sanitation and Child Hygiene should be extended to every county of the state. There should be in every county a health unit with a sufficient number of doctors, nurses and inspectors to render adequate medical, nursing and sanitation service to the entire county.

G. The Bureau of Vital Statistics should be so enlarged that it can more adequately handle the material that comes into its hands. There should also be attached to this department inspectors for enforcing the laws governing vital statistics reporting.

H. There should be a joint arrangement between the Board of Health and the State Board of Education whereby public health conditions as they exist in South Carolina together with their causes and methods of correction shall be taught in the schools of the state.
VI. Volunteer Health Agencies.

1.—THE AMERICAN RED CROSS. (1922 Report)

The local chapters of the American Red Cross employ or assist in the employment of nurses in seven counties in the state. The Southern Division of the Red Cross pays a part of the salaries of the supervisors of public health nursing of the State Board of Health. The activities of these nurses are included in the reports of the Bureau of Child Hygiene of the State Board of Health.

The policy of the Red Cross is to assist in the employment of public health nurses in counties and towns having none until the citizens of such counties or towns realize the value of the nurse sufficiently to support the work by taxation.

2.—TUBERCULOSIS ASSOCIATIONS. (1922 Report)

The South Carolina Tuberculosis Association is a voluntary organization, supported by the sale of Christmas Seals and by donations, for the purpose of combating tuberculosis in South Carolina. Associated with the state association are local associations and committees in several of the counties of the state.

The state association employs an executive secretary, a Modern Health Crusade director, a field clinic service and a part time stenographer and campaign director.

Local associations in Richland, Sumter, Greenville, Anderson, and Spartanburg counties employ local executive secretaries. These associations carry on a full program of education, investigation and relief work. Two of these associations own and operate local sanatoria, while Sumter is closely affiliated with a local sanitorium.
Part time tuberculosis nursing service was maintained in five other counties.

The report for the year shows that 45 visits were made to the counties by state workers; 160 talks were made to 12,800 persons; 26,000 letters were written; 46,000 pieces of literature distributed; 15,000 posters placed; health films shown to 20,000 persons; 9 exhibits at state and county fairs and county meetings; 2,258 school children examined; 1,950 persons examined at free clinics; 319 new active cases of tuberculosis discovered and 93 suspects found; 2,264 visits made to tuberculosis patients; and 35,000 school children enlisted in the Modern Health Crusade in 42 counties.

The Modern Health Crusade is a system of health education by which the child is trained in right habits of personal hygiene.

The tuberculosis associations maintain close relationship with the state and local Boards of Health, the schools and other agencies working for the eradication of tuberculosis and the improvement of public health conditions.

3.—THE SOUTH CAROLINA PUBLIC HEALTH ASSOCIATION.  
(1922 Report)

This organization was perfected in 1921 for the promotion of public health activities throughout the state. It is an entirely volunteer organization. It meets once each year at which time papers are read and discussions of conditions and remedies held. Thus far the organization has been too closely tied up with the official and other health agencies in the state to accomplish very much. From the point of view of the public its activities thus far have not been of much service.
VII. General Conclusions.

Specific conclusions have been drawn at the close of each section of this study. A repetition of those conclusions here would be needless. However there are a few general conclusions that should be added.

1. The ignorance of disease prevention and cure is distressingly widespread in South Carolina. This is clearly seen in the amount of preventable disease that exists in the state.

2. There is on the part of all classes a lack of appreciation of the fundamental importance of good health. The evidence for this statement is to be found in the very inadequate provision that has been made for health education, disease prevention and cure.

3. The vicious idea that health or disease are purely personal matters, to be dealt with as best the individual can, appears to be the prevailing idea in this state. The public have not realized the social importance and responsibility of public health. This conclusion is inevitable when one considers the scarcity of adequate public agencies for dealing with matters of the public health.

4. In the light of modern knowledge of disease prevention and cure and the advanced ideals of social responsibility that prevail, public health conditions, the agencies of disease prevention and cure and the public attitude toward these matters are nothing less than a disgrace to the citizenship of this state.

5. Conditions among the rural population and negroes demand the attention of the enlightened citizenship of the state.

6. All the best informed leaders agree that one of the most essential agencies for improving the public health is the voluntary health associations. These agencies are crippled in this state for lack of public support. Their support should be strengthened and their programs enlarged.
VIII. Tables on Hospitals.

Table 1.—Minimum Hospital Standard for Hospitals of 50 or More Beds.

American College of Surgeons.

1. That physicians and surgeons privileged to practice in the hospital be organized as a definite group or staff.

2. That membership on the staff be restricted to physicians and surgeons who are:

   a. Competent in their respective fields, and,
   b. Worthy in character and in matters of professional ethics; that in this latter connection the practice of division of fees, under any guise whatever, be prohibited.

3. That the staff initiate and with the approval of the governing board of the hospital, adopt rules, regulations and policies governing the professional work of the hospital; that these rules, regulations and policies specifically provide:

   a. That staff meetings be held at least once each month.
   b. That the staff review and analyze at regular intervals the clinical experience of the staff in the various departments of the hospital.

4. That accurate and complete case records be written for all patients and filed in an accessible manner in the hospital; a complete case record being one, except in an emergency, which includes the personal history, with physical examination with clinical, pathological and X-Ray findings when indicated; the working diagnosis; the treatment, medical and surgical; the medical progress; the condition on discharge, with final diagnosis, and in case of death the autopsy findings when available.
5. That clinical and laboratory facilities be available for the study, diagnosis and treatment of patients, these facilities to include at least chemical, bacteriological, serological, histological, radiographic, and fluoroscopic services in charge of a trained technician.

**Table 2.—Approved Standardized Hospitals in South Carolina January 1, 1923.**

- Anderson County Hospital
  - Anderson, S. C.
- Baker Sanatorium
  - Charleston, S. C.
- Columbia Hospital
  - Columbia, S. C.
  (Richland County Hospital)
- Florence Infirmary
  - Florence, S. C.
- Greenville City Hospital
  - Greenville, S. C.
- Roper Hospital
  - Charleston, S. C.
- St. Francis Xavier Infirmary
  - Charleston, S. C.

*Note.*—Hospitals preceded by a dash had adopted Standardization principles but were not fully approved.

**Table 3.—*General Hospitals in South Carolina.*

<table>
<thead>
<tr>
<th>Town</th>
<th>Hospital</th>
<th>Beds</th>
<th>Control</th>
<th>Race</th>
</tr>
</thead>
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<td>Race</td>
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</tr>
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<td>Mercy Hospital</td>
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<td>White</td>
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<td>Dr. Hayes Hospital</td>
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<td>A. C. L. Hospital</td>
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<td>Wallace Thompson</td>
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*This list and data was compiled from such hospital lists as were available and from questionnaires and personal interviews. It is as nearly complete as was possible within the resources of this investigation.*
### Table 4.—Special Hospitals.

#### A.—Tuberculosis

<table>
<thead>
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<td>Ridgewood Camp</td>
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<td>Semi-Public</td>
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<td></td>
<td>Palmetto Sanatorium</td>
<td>30</td>
<td>Public</td>
<td>Negro</td>
</tr>
<tr>
<td>Greenville</td>
<td>Hopewell Sanatorium</td>
<td>24</td>
<td>Semi-Public</td>
<td>White</td>
</tr>
<tr>
<td>Sumter</td>
<td>Camp Alice</td>
<td>8</td>
<td>Semi-Public</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td>Camp Alice</td>
<td>8</td>
<td>Semi-Public</td>
<td>Negro</td>
</tr>
</tbody>
</table>

#### B.—Rescue and Maternity

<table>
<thead>
<tr>
<th>Town</th>
<th>Hospital</th>
<th>Beds</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Charleston</td>
<td>Florence Crittenton Home</td>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### C.—Nervous

<table>
<thead>
<tr>
<th>Town</th>
<th>Hospital</th>
<th>Beds</th>
<th>Control</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia</td>
<td>Waverly Sanitarium</td>
<td>20</td>
<td>Private</td>
<td>White</td>
</tr>
<tr>
<td>Greenville</td>
<td>Corbett's Sanitarium</td>
<td>20</td>
<td>Private</td>
<td>White</td>
</tr>
</tbody>
</table>

#### D.—Insane and Feebleminded

<table>
<thead>
<tr>
<th>Town</th>
<th>Hospital</th>
<th>Beds</th>
<th>Control</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia</td>
<td>State Hospital for the Insane</td>
<td>2450</td>
<td>Public</td>
<td>All</td>
</tr>
<tr>
<td>Clinton</td>
<td>State School for the Feeble minded</td>
<td>103</td>
<td>Public</td>
<td>White</td>
</tr>
</tbody>
</table>

#### E.—Pellagra

<table>
<thead>
<tr>
<th>Town</th>
<th>Hospital</th>
<th>Beds</th>
<th>Control</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spartanburg</td>
<td>U. S. Pellagra Hospital</td>
<td>40</td>
<td>Public</td>
<td>White</td>
</tr>
</tbody>
</table>
F.—ORPHANS’ HOMES

<table>
<thead>
<tr>
<th>Town</th>
<th>Hospital</th>
<th>Beds</th>
<th>Control</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charleston</td>
<td>Charleston Orphans’ House</td>
<td>220</td>
<td>Private</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td>City Orphans’ House</td>
<td>59</td>
<td>Public</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td>Jenkins’ Orphanage</td>
<td>143</td>
<td>Public</td>
<td>Negro</td>
</tr>
<tr>
<td>Clinton</td>
<td>Thornwell Orphanage</td>
<td>357</td>
<td>Church</td>
<td>White</td>
</tr>
<tr>
<td>Columbia</td>
<td>Epworth Orphanage</td>
<td>125</td>
<td>Church</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td>Carlile Courtenay Home</td>
<td>126</td>
<td>Semi-Public</td>
<td>White</td>
</tr>
<tr>
<td>Greenville</td>
<td>I. O. O. F. Orphanage</td>
<td>40</td>
<td>Fraternal</td>
<td>White</td>
</tr>
<tr>
<td>Greenwood</td>
<td>Connie Maxwell Orphanage</td>
<td>350</td>
<td>Church</td>
<td>White</td>
</tr>
<tr>
<td>York</td>
<td>Church Home Orphanage</td>
<td>110</td>
<td>Church</td>
<td>White</td>
</tr>
</tbody>
</table>

NOTE.—In the hospital list only such institutions as have a direct relation to the Public Health are included.

TABLE 5.—RATES CHARGED BY HOSPITALS ANSWERING QUESTIONNAIRES.

<table>
<thead>
<tr>
<th>No. of hospitals</th>
<th>Rates per week</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$12.00—$20.00</td>
<td>Negro</td>
</tr>
<tr>
<td>1</td>
<td>14.00—18.00</td>
<td>Negro</td>
</tr>
<tr>
<td>1</td>
<td>14.00—25.00</td>
<td>Negro</td>
</tr>
<tr>
<td>1</td>
<td>14.00—28.00</td>
<td>White</td>
</tr>
<tr>
<td>1</td>
<td>14.00—35.00</td>
<td>White</td>
</tr>
<tr>
<td>1</td>
<td>17.50—28.00</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>17.50—35.00</td>
<td>White</td>
</tr>
<tr>
<td>1</td>
<td>21.00—35.00</td>
<td>White</td>
</tr>
<tr>
<td>1</td>
<td>21.50—50.00</td>
<td>White</td>
</tr>
<tr>
<td>1</td>
<td>25.00—45.00</td>
<td>White</td>
</tr>
</tbody>
</table>
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9. Special Reports, Departments of the State Board of Health.
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