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**Influenza; a study of measures
adopted for the control of the
epidemic.**

by William H. Kellogg

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A Study of Measures Adopted for the Control
of the Epidemic

BY

WILFRED H. KELLOGG, M. D.,

Secretary and Executive Officer
California State Board of Health

JANUARY, 1919

CALIFORNIA STATE PRINTING OFFICE
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SPECIAL BULLETIN No. 31

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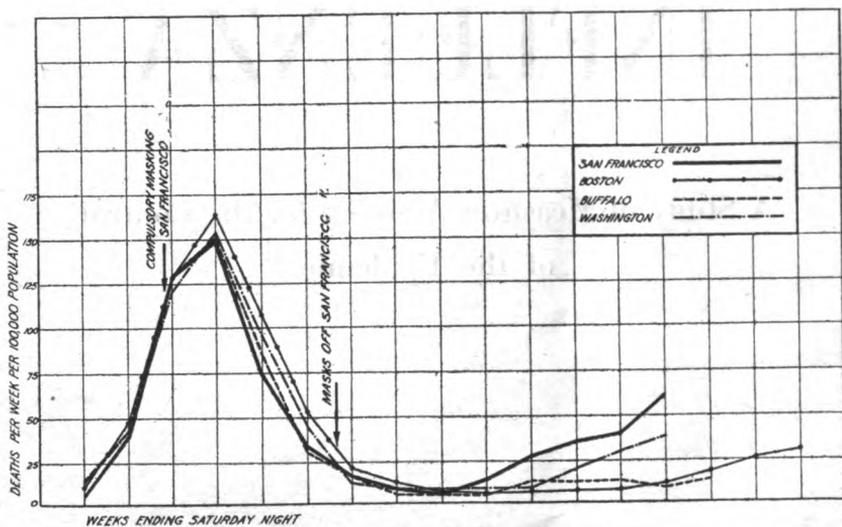
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Influenza and pneumonia death rates per 100,000 population, by weeks, for San Francisco, Boston, Buffalo and Washington. In San Francisco not only were public gatherings prohibited but the use of the face mask was made compulsory. In Boston, public gatherings were prohibited after the epidemic was well on its way. In Buffalo, measures for closing were adopted and the use of the mask was advised. In Washington, public gatherings were prohibited before a dozen cases had appeared.



THE INFLUENZA EPIDEMIC.

WITH SUMMARY OF CONCLUSIONS REACHED AS A
RESULT OF THE STUDY OF THE CONTROL
MEASURES ADOPTED.

By W. H. KELLOGG, M.D.,

Secretary and Executive Officer of the California State Board of Health.

It is intended in this article to discuss, in the light of the available data from all parts of the country, various measures that have been put into effect for the control of influenza.

As the State Board of Health, with its bureaus of Communicable Disease, of Epidemiology and of Vital Statistics, is in a position to have a much more comprehensive view of the situation than is possible for the strictly local health department, it is believed the discussion and conclusions herewith set forth will be of interest and assistance to all health officers.

From the first appearance of influenza (in the present pandemic) in the United States, at Chelsea, Massachusetts, August 28, 1918, its progress has been rapid. The first cases in California were reported during the week ending September 21, at the following places: Dunsmuir one case, Los Angeles three cases, San Francisco six cases, Arroyo Grande sixteen cases, and Modesto five cases. Progress was most rapid in Dunsmuir, one hundred and nine cases being reported for the week ending October 5. The popular alarm and demand for action was so great that the counsel of trained epidemiologists was thrown to the winds, and, goaded by the clamor of lay sanitarians, both medical and nonmedical, health officers applied the most varied and empirical assortment of measures for the control of the epidemic. One of the most popular measures, the gauze mask, has been widely adopted in California, several cities passing ordinances requiring its universal use. Hoping to stamp out the epidemic some towns flushed the streets with water, some claiming virtue in salt water, and others being content with fresh; other used sheep dip in the water; a slightly colored solution of permanganate of potash was used in some localities to splash upon the floors of public places. Churches, schools and theaters were closed in some communities, *but so far as known no saloons were closed, except upon the order of the State Board of Health.*

In reference to the measures used it must be understood that no criticism is being levelled at any person or city for any measure that may have been enforced.

Influenza and Pneumonia Death Rates per 100,000 Population, by Weeks, Eastern Cities.

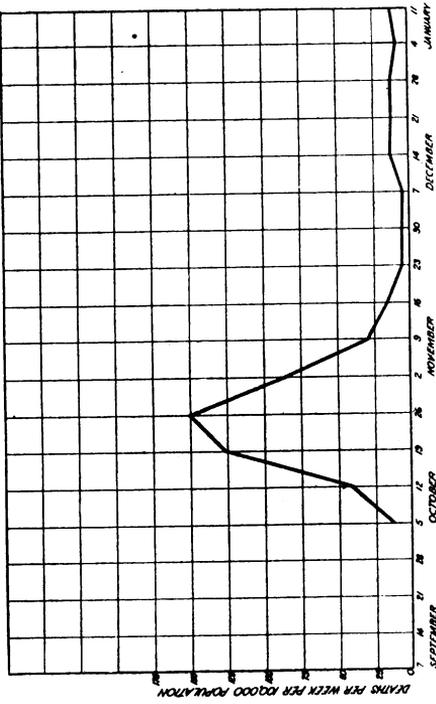


FIG. 2. Buffalo.

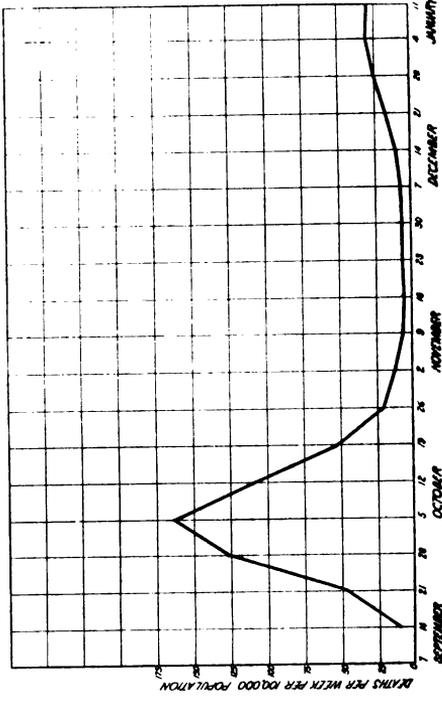


FIG. 4. Boston.

Influenza and Pneumonia Death Rates per 100,000 Population, by Weeks, New York.

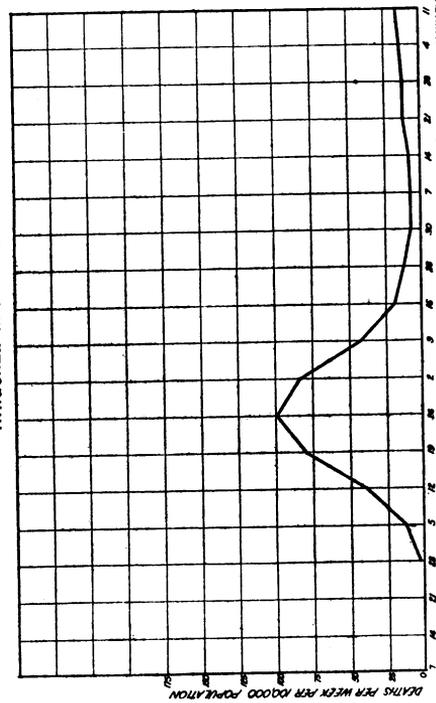


FIG. 1. New York.

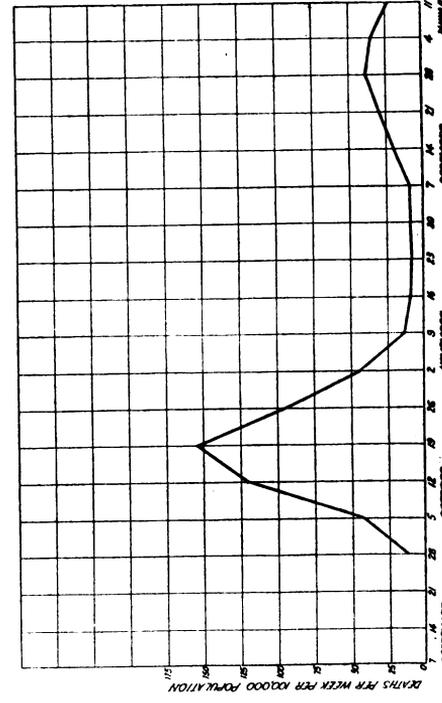


FIG. 3. Washington.

Influenza and Pneumonia Death Rates per 100,000 Population, by Weeks, California Cities.

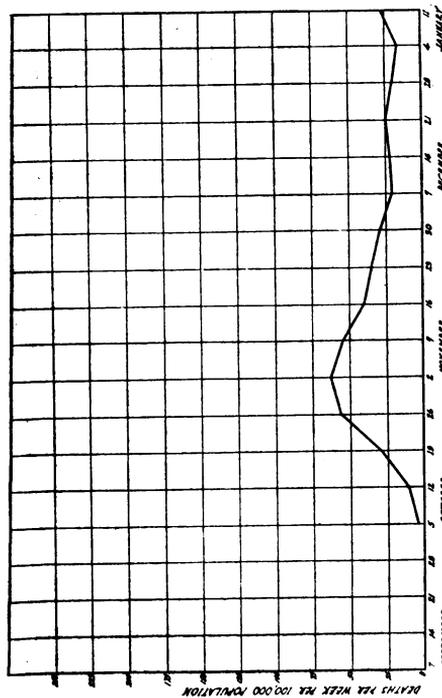


Fig. 5. Los Angeles.

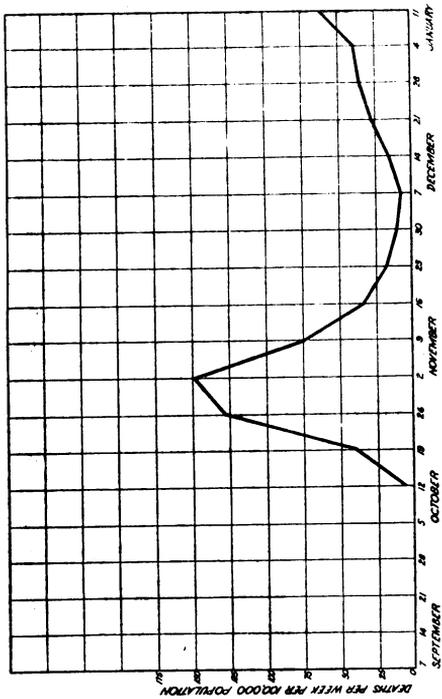


Fig. 6. San Francisco.

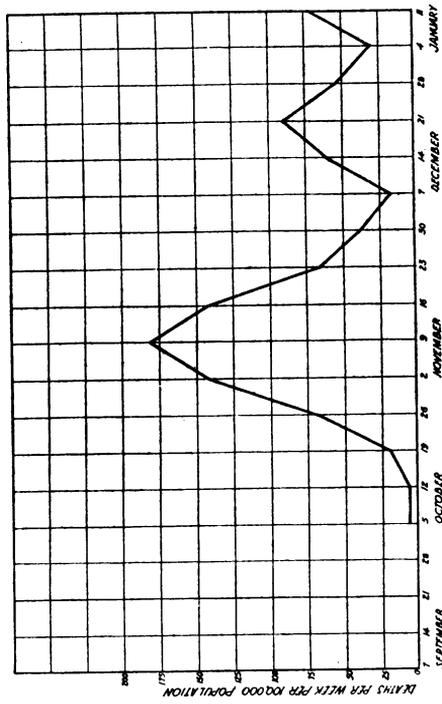


Fig. 7. Stockton.

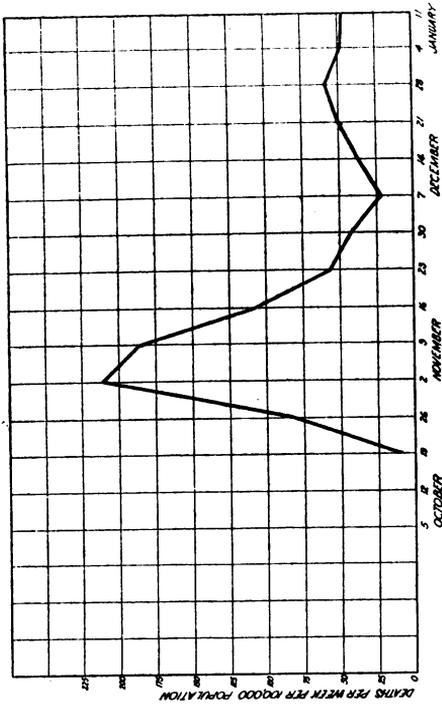


Fig. 8. Sacramento.

In the absence of scientific epidemiological information concerning this disease, local health departments are warranted in trying any plan that appears to offer any hope whatever, but it should be remembered that it is the duty of the State Board of Health to preserve its equilibrium at all times and to offer no advice that is not based on some more definite grounds than mere guesswork. With the great power and far-reaching results of the actions of the State Board of Health the possibilities for harm, if directed by hasty and unscientific policy, are manifest. California is fortunate in being in the same class as the states of New York, Massachusetts, and one or two others in the possession of a well-equipped public health department with a staff of highly trained and well-qualified experts, whose services and advice are always available to assist in the intelligent handling of emergencies, such as the present epidemic.

Measures Applied in the United States.

The principal measures that have been applied throughout the nation for the control of influenza are:

1. Limitation of Crowd Association.

This includes the closing of schools, churches, theaters, moving picture shows, public dances, supervision of cafe music, special sales in stores, regulating the hours for opening and closing factories to prevent the crowding of street cars, and also the complete closing of stores, saloons and pool halls.

2. Education of the public in measures of personal hygiene and prophylaxis.

3. Quarantine, including all measures, from mere isolation of cases to absolute quarantine of the entire family and the quarantining of towns, districts, etc.

4. The wearing of gauze masks.

5. The provision of hospital, medical and nursing facilities and the various sociological activities made necessary by any disease affecting such a large percentage of the population.

6. Vaccines.

7. Measures of sputum control.

No measures thus far offered other than those above mentioned are worthy of consideration even for a moment.

Limitation of Crowd Association.

In the light of available epidemiological evidence indicating that the disease is spread by direct contact, the closing of public gathering places would seem to be based upon sound reasoning. A period of sufficient time has elapsed since the beginning of the epidemic in this country that we can now cease mere speculation and use to advantage the actual experiences of different communities and various large cities, which have gathered accurate data on the epidemic. Some cities closed no gathering places, some closed nearly all, and others adopted an intermediate course.

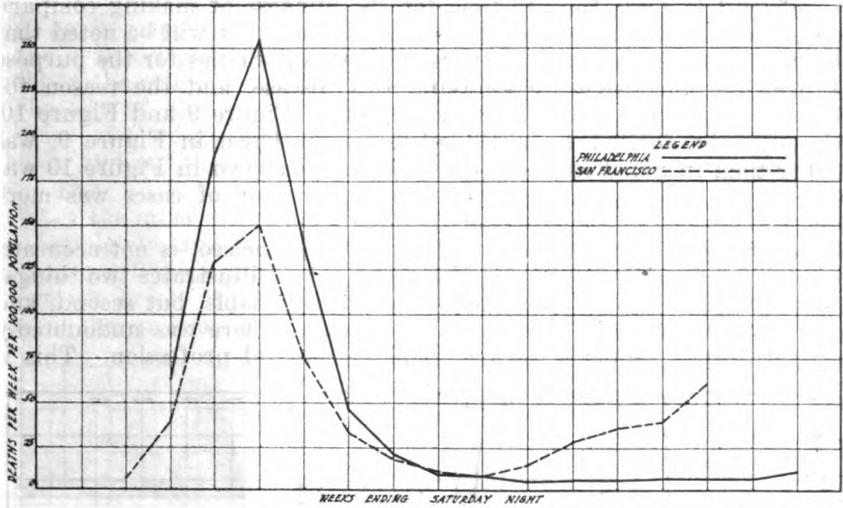
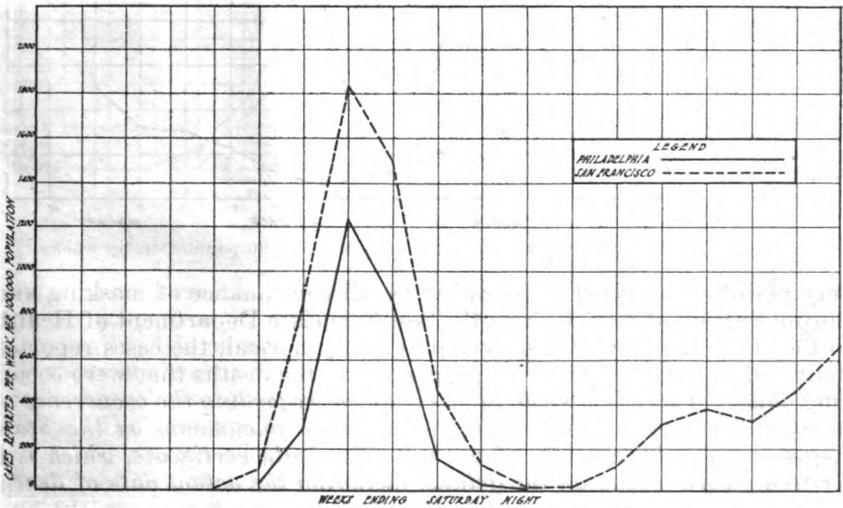


Fig. 9. Philadelphia and San Francisco. Comparative death rates per 100,000 population, by weeks.



For the purpose of drawing conclusions, the mortality records of various cities are herewith reproduced. (Fig. 1 to Fig. 8.) They will be referred to from time to time for the purpose of making comparisons between the different methods of procedure. It will be noted that the death records are invariably used by all authorities for the purpose of drawing conclusions in studying this disease, and the reason for this can be readily appreciated by inspecting Figure 9 and Figure 10. Although the death rate in Philadelphia, as shown in Figure 9, was higher than in San Francisco, the case rate as shown in Figure 10 was much lower, indicating clearly that the reporting of cases was more complete in San Francisco than in Philadelphia.

That the reporting of cases, even in San Francisco, is not accurate, is indicated by an inspection of Figure 11, which illustrates two things: First, that not only are morbidity reports unreliable, but second, and most disquieting of all, the fact is shown that there was undoubtedly a psychological influence acting upon the medical profession. This is

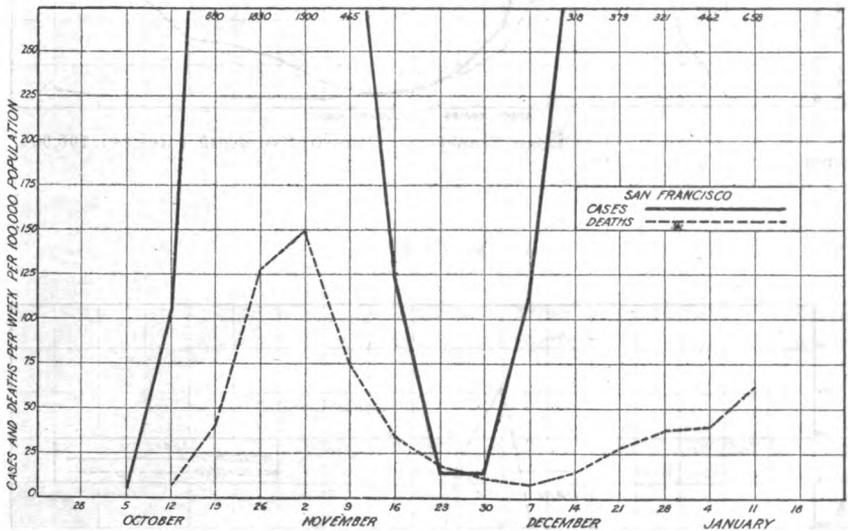


FIG. 11. San Francisco. Cases and deaths per 100,000 population by weeks.

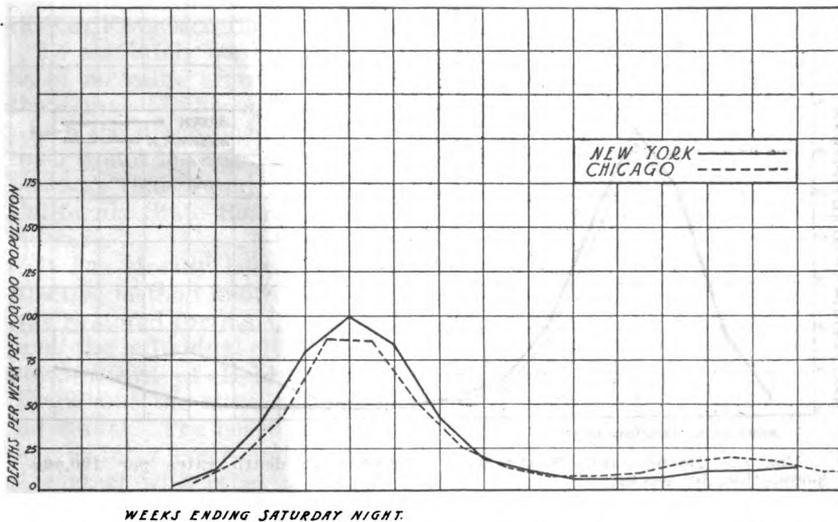
very plainly illustrated. Following the discontinuance of masking and the publication of reports from the San Francisco Department of Health to the effect that conditions were practically normal, the cases reported daily fell to a figure out of all proportion to the deaths that were occurring daily. *There is absolutely no argument regarding the occurrence or nonoccurrence of a death from influenza or pneumonia as the State Registrar of Vital Statistics has on file the death certificate, which is a written record giving all the details, including the actual date of death.*

There is only one explanation for the discrepancy between the case rates and the death rates in that part of the curve for November 23 to November 30, which shows that for two weeks there were about as many deaths occurring as there were cases reported. This would indicate that physicians, in their optimism following the subsidence of the main

portion of the epidemic, unconsciously stretched a point in favor of the diagnosis against influenza. The same explanation applies in part to the rapid rise of cases following the demand of the health officer for the re-enactment of a masking ordinance, in which case the physicians were again impelled by the psychological influence of the nonsupport of the health department by the supervisors, to give the benefit of the doubt to the side of influenza in their diagnosis.

The city of New York did not prohibit any public gatherings, and the city of Chicago closed theaters and dances, but not churches and schools, and not there until after the crest of the epidemic had passed. (Fig. 12.)

All of the other cities, for which charts are presented, closed more or less completely, and attention is directed particularly to the curves for Boston and Washington, D. C., shown in Figure 13. Having Boston's experience before it, in which city closing was not instituted until the peak of the epidemic was reached, Washington closed everything before



Education of the Public in Measures of Personal Hygiene and Prophylaxis.

This is an important measure and would be more important if we were better informed concerning the cause and mode of spread of influenza. The present and universal tendency is to consider the disease as droplet borne, that is to say, the infectious agent probably exists in the secretions of the mouth and nose and is spread through the medium of the fine droplets of moisture expelled during the acts of sneezing, coughing and talking. Many of the individuals who inhale the infection, in turn, become infected. The conviction is growing among epidemiologists that the transfer of mouth secretions through the medium of eating and drinking utensils is common. Consequently, more and more attention is being paid to measures that favor this possibility. These considerations, for which we have no proof whatever,

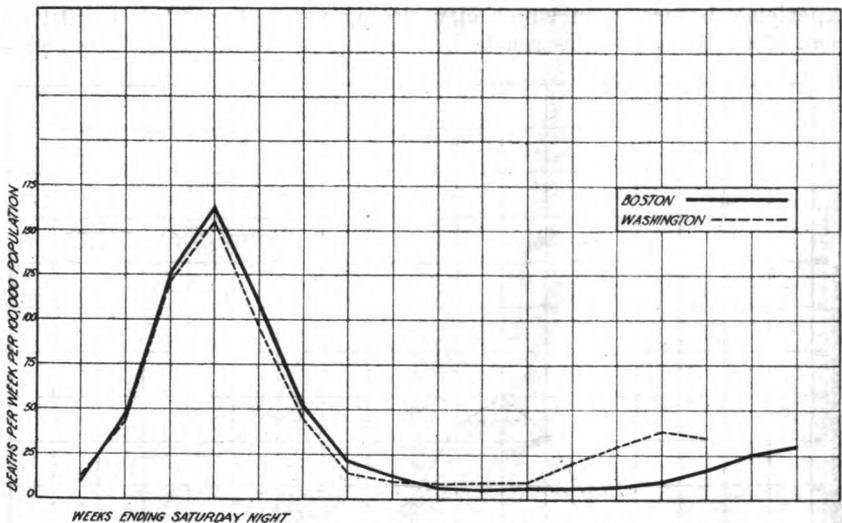


FIG. 13. Boston and Washington. Comparative death rates per 100,000 population, by weeks.

are the basis of hygienic advice given to the public so that they may take such individual measures as may be possible to protect themselves.

Two circulars are reproduced in Figure 14 and Figure 15. One of these gives directions and advice for the making and wearing of gauze masks, and both illustrate very well the objects striven for in this type of control measure. The California State Board of Health distributed more than 200,000 of these circulars early in the progress of the epidemic.

Quarantine.

In the absence of any definite knowledge of the etiology of the disease, quarantine is one of the most rational of control measures, but it is a measure that has, for various reasons, not seemed advisable for state-wide application. We have no laboratory means of diagnosis; also the establishment of a clinical diagnosis is frequently a matter of difficulty, as evidenced by the bizarre morbidity reporting previously

referred to. These make the application of a rigid quarantine, with restriction of the movements of all members of the family, very uneven in its application. There are great possibilities of overlooking cases on the one hand, and of working undue hardship upon many persons, through a leaning toward making an easy diagnosis of influenza on the other hand.

The early isolation of cases, however, is of supreme importance. For this reason the California State Board of Health has made influenza reportable and isolatable, requiring that all cases be isolated in their own homes, without, however, the concomitant placarding and interference with the movements of others, that accompanies absolute quarantine.

Quarantine of whole communities, either intentional or unintentional, kept the disease out absolutely so long as quarantine was maintained. This is but another proof that the disease is of contact infection. Influenza has, in this way, been kept out of a number of institutions; and from an entire camp, namely, Goat Island Naval Training Station in San Francisco Bay.

To absolutely quarantine a town against the rest of the world would be of no value after the first case had appeared in that town. If, in the course of the outbreak, it had been possible to find any town in which the disease had not already appeared, it is very doubtful if that town would have submitted to the inconvenience and interference with business that would have followed such a rigid quarantine, had the California State Board of Health seen fit to invoke this most drastic measure.

It has already been stated that early isolation of cases is the most effective method known for preventing the spread of the disease, and it is here stated further that the application of this measure depends more upon the individual citizen than upon the health officer. The California State Board of Health has, in its printed instructions distributed throughout the state, placed emphasis upon the responsibility of the individual. The board has advised every person suffering from a cold to remain at home and to take every possible precaution not to come in contact with other persons. Many people suffering from so-called colds are in reality suffering from influenza in a mild form. Many severe cases of the disease have undoubtedly been contracted from persons suffering from such colds. If each individual were to realize his personal responsibility in this matter more good would be accomplished in the reduction of the prevalence of influenza than in any other way.

The Wearing of Gauze Masks.

Notwithstanding the fact that the very complete records at the disposal of the California State Board of Health indicate conclusively that the compulsory wearing of masks does not affect the progress of the epidemic, it was advised that individuals wear them when in close association with their friends, as it is upon just those occasions that, under a compulsory law, the mask is most liable to be laid aside. The use of the face mask was advised particularly in the presence of any one who was suffering from a cold or who had recently recovered from influenza.

Early in the progress of the epidemic the California State Board of Health issued a regulation (Fig. 16) requiring the wearing of masks by those in actual contact with known cases, and by persons suffering from a cold while in association with the general public. Under this regulation any health officer could arrest any person with a cold who was found going about in public unmasked. The reason for the above statement regarding the faults of the mask as an effective protection when applied forcibly to whole communities is to be found by a comparison of the mortality charts of those cities that did not use the mask with those cities that did. The frontispiece shows the cities of Boston, Buffalo, San Francisco and Washington, each with almost identically the same curve and the same death rate per hundred thousand, and in only one of them, San Francisco, was the mask used. New York City, before referred to, as one of those cities that did not prohibit public gatherings, did not use masks either, and its record of deaths is lower than that of any of the other larger cities. Stockton is one town in California that has worn the mask consistently. In Figure 18 is shown Stockton's record as compared with Boston, which did not require the mask. The conclusion is definitely established that, applied in this manner, the mask is ineffective and the reason, as in the case of closing, is also easy of explanation and does not necessarily disqualify the mask as a useful agent for application by the intelligent individual as a means of personal protection. During the compulsory universal wearing of the mask in San Francisco it was generally observed that the masks were worn carefully under circumstances of least necessity, as upon the public streets and in the open air. They were just as conscientiously laid aside in private offices, and among gatherings of friends, the very places where the chances of contact with an early case of influenza and where the conditions for the transfer of droplet infection were the most favorable.

Many instances were observed among hospital attendants where apparently the mask was no protection to the wearers. This was the experience of the San Francisco Hospital, which, during the epidemic, was converted into an influenza hospital. In this institution 78 per cent of the nurses contracted influenza notwithstanding the fact that this is probably the best conducted hospital and under the best discipline of any similar institution in the state. These nurses lived in quarters, which are much better and less subject to crowding than is usual among similar groups in other hospitals, not more than three nurses occupying any one room. If the nurses contracted influenza from each other by reason of carelessness in wearing the mask in their own quarters, the expected incidence of infections should have corresponded with that of the general community, or not more than 10 per cent. The fact that the percentage of infections in this group was 78 per cent would seem to show beyond all doubt that the infection was received from the patients they cared for. It may be that some explanation other than the passage of the virus through the meshes of the gauze can be found, but if so, this does not alter the case in favor of the mask. If we take into consideration the influence of dosage in the production of infections, the case may not be as bad as this circumstance would

indicate. It may be that the mask would have protected against an occasional exposure in the wards of the hospital; but incomplete obstruction to the passage of the virus and repeated exposure to a large number of patients undoubtedly operated to increase the dosage of infectious material capable of being received in spite of the wearing of the mask. However, that may be, and it is hoped that certain experiments now under way in the State Hygienic Laboratory of the California State Board of Health, will throw further light on this subject. The case against the mask as a measure of compulsory application for the control of epidemics appears to be complete.

Another most important reason for the failure of the mask, when universally worn, lies in the fact that the majority of masks worn under compulsory ordinances were not properly made and could not reasonably be expected to have any value whatever. Many instances were observed where the mask consisted of only one or two layers of a very coarse-mesh gauze, and the majority of the masks furnished by the Red Cross, which probably made up the bulk of those used, were undeniably too light and coarse in texture to do more than afford a comfortable feeling of safety on the part of the wearer. There seems to be some merit in the contention of certain physicians that the indiscriminate compulsory wearing of masks is objectionable by reason of the rebreathing of a small percentage of expired air, together with the warming of the total air intake. While not of sufficient moment to be considered when the wearing of the mask is actually necessary, it may perhaps have an unhygienic influence when extended to the entire working day of the individual.

It is not necessary for us, however, as health officers, to go into any such considerations as this for the only thing that concerns us is whether or not we can get results in the way of actually limiting the height and duration of the epidemic by means of this measure as applied by law.

The Provision of Hospital, Medical and Nursing Facilities.

The provision of hospital, medical and nursing facilities and various other sociological activities connected with the management of community measures during the epidemic of influenza are measures of the utmost importance as having a bearing, not so much upon the extension of the disease, as upon the total death rate, the comfort of the victims, and the subsequent influences upon related health matters, such as the prevalence of tuberculosis. It is of the utmost importance that communities so organize themselves that adequate hospital care can be provided for cases of influenza and complicating pneumonia. Constructing, or otherwise, obtaining, hospitals for these cases is made imperative by the necessity for conserving the supply of doctors and nurses and these patients can be more efficiently and more economically cared for in groups than when scattered throughout the community. Another reason for the construction of such hospitals lies in the demonstrated fact that the influenza-pneumonia cases have a much lower mortality rate when cared for in out-of-door temporary shacks than in heated and less

- well-ventilated permanent structures. Realizing this need for temporary structures the California State Board of Health early in the epidemic sent blue prints of plans for the construction of such temporary hospitals to health officers and to municipal authorities throughout the
- State. These plans were prepared by the State Department of Engineering in accordance with suggestions made by the State Board of
- Health (Fig. 18). Providing for the wants of the large number of victims in their own homes who are not subjects for hospital care, because not suffering from pneumonia, but who, nevertheless, must depend upon their neighbors for the ordinary wants of life, is one of
- the problems requiring attention of the local authorities. Organization of the available resources should be accomplished early and arrangements made for the systematic card indexing of patients to avoid duplication in the assignment of home visitors, doctors, and nurses.

Vaccines.

- Two types of vaccines have been used; one made from the so-called *influenza bacillus of Pfeiffer*, and the other made of various mixtures of the organisms associated with the secondary pneumonia complications. The first type would be the most rational if it were known that the Pfeiffer bacillus is the true cause, which is not the case. We are as much in the dark as ever regarding the microbial cause of influenza. The mixed vaccines directed against pneumonic complications offer more hope of being of some slight benefit, although some recent carefully controlled experiments by Dr. G. W. McCoy, Director of the Hygienic Laboratory of the U. S. Public Health Service, fail to show any protective value for either type of vaccine. The Hygienic Laboratory of the California State Board of Health, yielding to the popular clamor for vaccine, prepared and distributed, free of charge, many thousand doses of the influenza vaccine. The manufacture of the product has now been discontinued, as it was conclusively proved that it
- had no protective value. (See report of Influenza Committee of the American Public Health Association, page 20.)

Measures of Sputum Control.

- These include the enforcement of the anti-spitting law and the sterilization of drinking receptacles law. It is possible that the role of drinking and eating utensils in the transfer of mouth secretions is of great importance and these laws should be rigidly enforced. Failure to observe these laws should be sufficient justification for the closing of soda fountains, saloons, etc., when the law is not observed.

Before attempting to draw any conclusions that will aid us in the main question of interest, "*What Can We Do to Stop the Spread of Influenza?*" it will be just as well to review other world plagues, with which we are more familiar, because they have been completely worked out and largely conquered. For this purpose, the following table gives an idea of the progress of knowledge regarding the control of epidemic diseases.

THE EVOLUTION OF EPIDEMIC DISEASE CONTROL.

THE OLD.

Before we had learned the cause and method of control.

THE NEW.

Modern method of control and results thereof.

Bubonic Plague.

In 1665, 78,000 people died in London. In 1894 an epidemic with the loss of millions of lives in India and China.

1918. Plague now possible of absolute control through knowledge of its cause and the relationship of the rat and flea to its spread.

Smallpox.

One hundred years ago the person who was not pockmarked was the exception; caused fifteen million deaths in Europe during the seventeenth century.

1918. Through the discovery of vaccination by Jenner in 1796, is now a comparatively rare disease and the most easily controlled of all.

Cholera.

In 1832 a terrible epidemic in the United States; churches, schools and public gatherings closed.

1918. Cause and spread now known. Protection of drinking water supplies an absolute safeguard.

Yellow Fever.

Great epidemic in New Orleans in 1878, at which time mode of spread not known. Measures used, "shotgun quarantine," public gatherings closed.

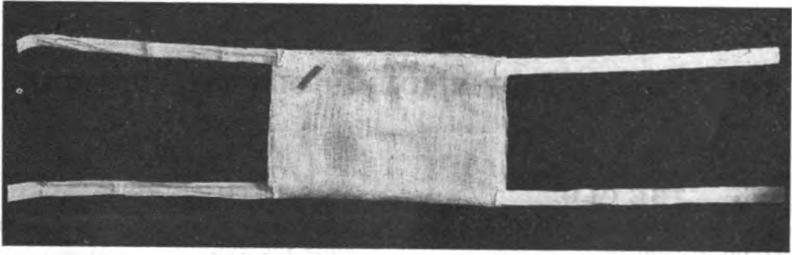
1918. Mode of spread now known. Exterminate mosquitoes; almost eradicated from the entire world.

Influenza.

In 1918 a great pandemic over the world; about 400,000 deaths in the United States. Cause, and mode of spread unknown. Measures used—closing of schools, churches, gatherings, wearing of masks, etc.

The future—

?

TO AVOID INFLUENZA, WEAR A MASK.**HOW TO MAKE A MASK**

Use four to six layers of fine mesh gauze or six to eight layers of coarse gauze, or three layers of butter cloth 5 inches by 8 inches in size. Sew these together at the edges and attach tapes eight inches long to all of the four corners, as shown in illustration. Stitch a bit of colored worsted or tape on the side which is always to be kept outermost when wearing the mask.

APPLICATION

As shown in illustration the mask should be firmly applied over the nose, mouth and chin by means of the four tapes, the upper

HOW TO WEAR A MASK

two passing above and the lower two below the ears. Each pair should be securely tied. It is very important that the upper margin be drawn tightly over the bridge of the nose just below the eyes. **ALWAYS WEAR THE MARKED SIDE OUTERMOST.**

REMEMBER

Sunshine and fresh air are important factors in the prevention and treatment of both influenza and pneumonia. **GET PLENTY OF FRESH AIR AND SUNSHINE.**

PRECAUTIONS

It is necessary that these masks be **KEPT CLEAN AT ALL TIMES. THEY MUST NOT BE HANDLED AFTER THEY ARE TIED ON.**

When not used in the sickroom remove at convenient times for airing and drying in the sun, if possible. They should also be sterilized by boiling or disinfecting at convenient intervals.

Masks should be put on before entering the sickroom, should not be handled after tying on and must be boiled at least five minutes and thoroughly dried every time they are taken off. It is advisable to have two masks so that while one is in use the other can be sterilized, disinfected and dried.

SOME PERSONS ARE REQUIRED TO WEAR MASKS

During the presence, in epidemic form, of influenza, the wearing of gauze masks of approved design will be required by the State Board of Health as follows:

1. Every doctor, nurse, attendant or visitor within a hospital, which cares for influenza cases, shall wear a mask of acceptable type while inside the building.
2. All members of every family in which a case of influenza exists shall wear, while in the vicinity of the infected person, a mask of approved type.
3. Every person suffering from a cold in the head or acute cough, or any of the other recognized symptoms of influenza or grippe shall wear a mask of approved style while outside their own living apartments.

Besides these required uses, it is recommended that masks be worn in stores and at such social gatherings as are permitted. Barbers, dentists, druggists and many others should be encouraged to wear them as a duty to the public. During the present epidemic, there are many cases that are so mild as to escape recognition as true influenza cases, even by doctors. Inasmuch as these cases are just as contagious as the severe cases, persons suffering from symptoms of slight cold only should remember this possibility and not expose other unnecessarily. They are required by the State Board of Health to wear masks while outside their living apartments.

HOW TO RECOGNIZE INFLUENZA AND WHAT TO DO

The general symptoms (fever, pain and depression) are more severe than in ordinary colds. One usually feels sick rather suddenly (feels weak, has pains in the eyes, ears, head and back and may be sore all over). Many feel dizzy, some vomit and most patients complain of feeling chilly—with this comes a fever, and the temperature rises to 100-104. In most cases the pulse remains relatively slow. The eyes may be slightly injected (bloodshot). There may be running from the nose or there may be some cough. The signs of a cold may not be marked; nevertheless the patient looks and feels very sick.

Go home at once and go to bed. This will help keep away dangerous complications and prevent scattering the disease germs far and wide. No one but the attendant or nurse should be allowed in the room. Call a doctor at once and follow carefully his directions regarding the care and isolation of the patient. Since the disease may be carried on articles taken from the sick-room, it is highly important that such should be thoroughly sterilized or disinfected before being used or handled again.

For Additional Copies Apply to California State Board of Health, Sacramento

Fig. 14. Mask poster issued by the California State Board of Health.

INFLUENZA!

How to Avoid It! How to Care for Those Who Have It!

The following suggestions of the California State Board of Health may prove of immeasurable value to any man or woman who will read, remember and act upon them in the present great emergency. The counsel here set forth has been prepared after consultation with some of the ablest medical men in America. If you will follow the dictates of this official bulletin, you will be doing your duty to your fellow man and to yourself.

What to Do Until the Doctor Comes

If you feel a sudden chill, followed by muscular pain, headache, backache, unusual tiredness and fever, go to bed at once.

See that there is enough bed clothing to keep you warm.

Open all windows in your bedroom and keep them open at all times, except in rainy weather.

Take medicine to open the bowels freely.

Take some nourishing food such as milk, egg-and-milk or broth every four hours.

Stay in bed until a physician tells you that it is safe to get up.

Allow no one else to sleep in the same room.

Protect others by sneezing and coughing into handkerchiefs or cloths, which should be boiled or burned.

Insist that whoever gives you water or food or enters the sick room for any other purpose shall wear a gauze mask, which may be obtained from the Red Cross or may be made at home of four to six folds of gauze and which should cover the nose and mouth and be tied behind the head.

Remember that these masks must be kept clean, must be put on outside the sick room, must not be handled after they are tied on and must be boiled five minutes and thoroughly dried every time they are taken off.

To Householders.

Keep out of the sick room unless attendance is necessary.

Do not handle articles coming from the sick room until they are boiled.

Allow no visitors, and do not go visiting.

Call a doctor for all inmates who show signs of beginning sickness.

The usual symptoms are: Inflamed and watery eyes, discharging nose, backache, headache, muscular pain, and fever.

Keep away from crowded places, such as "movies," theaters, street cars.

See to it that your children are kept warm and dry, both night and day.

Have sufficient fire in your home to disperse the dampness.

Open your windows at night. If cool weather prevails, add extra bed clothing.

To Workers.

Walk to work if possible.

Avoid the person who coughs or sneezes.

Wash your hands before eating. Make full use of all available sunshine.

Do not use a common towel. It spreads disease.

Should you cough or sneeze, cover nose and mouth with a handkerchief.

Keep out of crowded places. Walk in the open air rather than go to crowded places of amusement.

Sleep is necessary for well-being—avoid over-exertion. Eat good, clean food.

Keep away from houses where there are cases of influenza.

If sick, no matter how slightly, see a physician.

If you have had influenza, stay in bed until your doctor says you can safely get up.

To Nurses.

Keep clean. Isolate your patients.

When in attendance upon patients, wear a mask which will cover both the nose and the mouth.

When the mask is once in place, do not handle it.

Change the mask every two hours.

Owing to the scarcity of gauze, boil for 5 minutes and rinse, then use the gauze again.

Wash your hands each time you come in contact with the patient. Use bichloride of mercury, 1-1000, or Liquor Cresol compound, 1-100 for hand disinfection.

Obtain at least seven hours' sleep in each twenty-four hours. Eat plenty of good, clean food.

Walk in the fresh air daily.

Sleep with your windows open. Insist that the patient cough,

sneeze or expectorate into cloths that may be disinfected or burned. Boil all dishes. Keep patients warm.

For Copies of this Publication Apply to

California State Board of Health, Sacramento

(Prepared by Massachusetts State Department of Health)

FIG. 15. Influenza poster issued by California State Board of Health.

CALIFORNIA STATE BOARD OF HEALTH.

SACRAMENTO, October 21, 1918.

To all city and county health officers:

Acting under authority of section 2979a of the Political Code, the wearing of gauze masks of approved design during the presence, in epidemic form, of influenza, will be required as follows:

1. Every doctor, nurse, attendant or visitor within a hospital, which cares for influenza cases, shall wear a mask of acceptable type while inside the building.

2. All members of every family in which a case of influenza exists shall wear, while in the vicinity of the infected person, a mask of approved type.

3. Every person suffering from a cold in the head or acute cough, or any of the other recognized symptoms of influenza or grippe shall wear a mask of approved type while outside their own living apartments.

An acceptable type of mask is made of from two to four layers of fine mesh gauze or six to eight layers of coarser gauze, or of three layers of butter cloth, 5 inches by 8 inches in size, and held firmly over the face by means of tapes attached to the corners.

Another acceptable type is made by folding cornerwise a clean closely woven handkerchief and tying two corners behind the head, the other corner falling below the chin, the upper margin crossing the face just below the eyes.

In many instances department store managers may be prevailed upon to require their clerks to wear them and it will be of the utmost value if barbers, dentists and particularly druggists would wear them. The greatest publicity should be given to the mask as a preventive measure and the public encouraged to wear them generally both in and out of doors.

Yours very truly,

W. H. KELLOGG, M. D.
Secretary.

FIG. 16. Regulations of the California State Board of Health, requiring the use of the mask upon certain individuals.

COMMENTS AND RECOMMENDATIONS OF THE COMMITTEES
OF THE AMERICAN PUBLIC HEALTH ASSOCIATION, WHICH
MET IN CHICAGO DECEMBER 9-12, 1918.

"The present epidemic is the result of a disease of extreme communicability. So far as information available to the committee shows, the disease is limited to human beings.

"The micro-organism or virus primarily responsible for this disease has not yet been identified. There is, however, no reason whatsoever for doubting that such an agency is responsible for it. Mental conditions may cause one to believe he has influenza when he has not, and may make the patient who has the disease suffer more severely than he otherwise would. No mental state alone, however, will cause the disease in one who is not infected by the organism or virus that underlies the malady.

"While the prevailing disease is generally known as influenza, and while it will be so referred to in this statement, it has not yet been satisfactorily established that it is the identical disease heretofore known by that name, nor has it been definitely established that all preceding outbreaks of disease styled at the time 'influenza' have been outbreaks of one and the same malady.

"There is no known laboratory method by which an attack of influenza can be differentiated from an ordinary cold or bronchitis or other inflammation of the mucous membranes of the nose, pharynx, or throat.

"There is no known laboratory method by which it can be determined when a person who has suffered from influenza ceases to be capable of transmitting the disease to others.

"Deaths resulting from influenza are commonly due to pneumonias resulting from an invasion of the lungs by one or more forms of streptococci, or by one or more forms of pneumococci, or by the so-called influenza bacillus, or bacillus of Pfeiffer. This invasion is apparently secondary to the initial attack.

"Evidence seems conclusive that the infective micro-organism or virus of influenza is given off from the nose and mouth of infected persons. It seems equally conclusive that it is taken in through the mouth or nose of the person who contracts the disease, and in no other way, except as a bare possibility through the eyes, by way of the conjunctivae or tear ducts.

"If it be admitted that influenza is spread solely through discharges from the noses and throats of infected persons finding their way into the noses and throats of other persons susceptible to the disease, then no matter what the causative organism or virus may ultimately be determined to be, preventive action logically follows the principles named below and, therefore, it is not necessary to wait for the discovery of the specific micro-organism or virus before taking such action.

"I. Break the channels of communication by which the infective agent passes from one person to another.

"II. Render persons exposed to infection immune, or at least more resistant, by the use of vaccines" (if we had such an agent).

"III. Increase the natural resistance of persons exposed to the disease, by augmented healthfulness."

The first of these three postulates is the most important and will be discussed after quoting from the report on the other two. Regarding the second postulate, the use of vaccines, the committee says: "In view of the fact that the causative organism is unknown, there is no scientific basis for the use of any particular vaccine against the primary disease. If used, any vaccine must be employed on the chance that it bears a relation to the unknown organism causing the disease.

"The use of vaccines for the complicating infections rests on more logical grounds, and yet the committee has not sufficient evidence to indicate that they can be used with any confident assurance of success. In the use of these vaccines the patient should realize that the practice is still in a developmental stage."

The third, or Increase of Natural Resistance Measure, is disposed of, briefly, as follows: "Physical and nervous exhaustion should be avoided by paying due regard to rest, exercise, physical and mental labor and hours of sleep. The evidence is conclusive, however, that youth and bodily vigor do not guarantee immunity to the disease."

The first postulate is treated as follows, essential paragraphs only being reproduced:

"The nature of the preventive measures practicable and necessary in any given community depends in a large part upon the nature of the community itself, as to population characteristics, industries, and so on, and upon the stage and type of the epidemic curve. For example, the measures to be adopted in a purely rural community would not be practicable or desirable in a large metropolitan area, nor would the measures desirable and feasible at the beginning or end of an epidemic be found those best adapted for the intervening period. The committee has found it impossible, therefore, to lay down any rules for the guidance of all health officials alike in preventive measures. The most it has been able to do has been to state certain general principles that in its judgment should underlie administrative measures for the prevention of influenza. The application of these principles to the needs of any particular community must be left for determination by the officers of that community who are responsible for the protection of its public health.

"The preventive measures recommended by the committee are as follows:

"A. Efficient organization to meet the emergency, providing for a centralized co-ordination and control of all resources.

"B. Machinery for ascertaining all facts regarding the epidemic:

1. Compulsory reporting.

2. A lay or professional canvass for cases, etc.

"C. Widespread publicity and education with respect to respiratory hygiene, covering such facts as the dangers from coughing, sneezing, spitting, and the careless disposal of nasal discharges; the

advisability of keeping the fingers and foreign bodies out of the mouth and nose; the necessity of handwashing before eating; the dangers from exchanging handkerchiefs; and the advantages of fresh air and general hygiene. Warnings should be given regarding the danger of the common cold, and possibly cold should be made reportable so as to permit the sending of follow-up literature to persons suffering from them. The public should be made acquainted with the danger of possible carriers among both the sick and the well and the resultant necessity for the exercise of unusual care on the part of everybody with respect to the dangers of mouth and nasal discharges.

“D. Administrative procedures:

1. There should be laws against the use of common cups, and improperly washed glasses at soda fountains and other public drinking places, which laws should be enforced.

2. There should be proper ventilation laws, which laws should be enforced.

“**Closing:** Nonessential gatherings should be prohibited. Necessary gatherings should be held under such conditions as will insure the greatest possible amount of floor space to each individual present, and a maximum of fresh air, and precautions should be taken to prevent unguarded sneezing, coughing, cheering, etc.

“Where the necessary activities of the population, such as the performance of daily work and earning of a living, compel considerable crowding and contact, but little is gained by closing certain types of meeting places. If, on the other hand, the community can function without much of contact between individual members thereof, relatively much is gained by closing or preventing assemblages.

“**Schools:** (a) Theoretically, schools increase the number and degree of contacts between children. If the schools are closed, many of the contacts which the children will make are likely to be out of doors. Whether or not closing will decrease or increase contacts must be determined locally. Obviously, rural and urban conditions differ radically in this regard.

(b) Are the children in coming to and going from school exposed to inclement weather or long rides in overcrowded cars?

(c) Is there an adequate nursing and inspection system in the schools? * * *

“**Churches:** If churches are to remain open, services should be reduced to the lowest number consistent with the adequate discharge of necessary religious offices, and such services as are held should be conducted in such a way as to reduce to a minimum, intimacy and frequency of personal contact.

“**Theaters:** As regards theaters, movies, and meetings for amusement in general, it seems unwise to rely solely or in great part upon the ejection of careless coughers. In the first place it is difficult to determine who is a careless cougher, and after each cough, danger has already resulted. It seems, too, that the closing of theaters may have as much educational value as their use for direct educational purposes, etc. Discrimination as to closing among theaters, movies, etc., on the basis of efficiency of ventilation and general sanitation, may be feasible.

“Funerals: Public funerals and accessory funeral functions should be prohibited, being unnecessary assemblies in limited quarters, increasing contacts and possible sources of infection.

“Masks: The wearing of proper masks in a proper manner should be made compulsory in hospitals and for all who are directly exposed to infection. It should be made compulsory for barbers, dentists, etc. The evidence before the committee as to beneficial results consequent upon the enforced wearing of masks by the entire population at all times was contradictory, and it has not encouraged the committee to suggest the general adoption of the practice. Persons who desire to wear masks, however, in their own interests, should be instructed as to how to make and wear proper masks, and encouraged to do so.

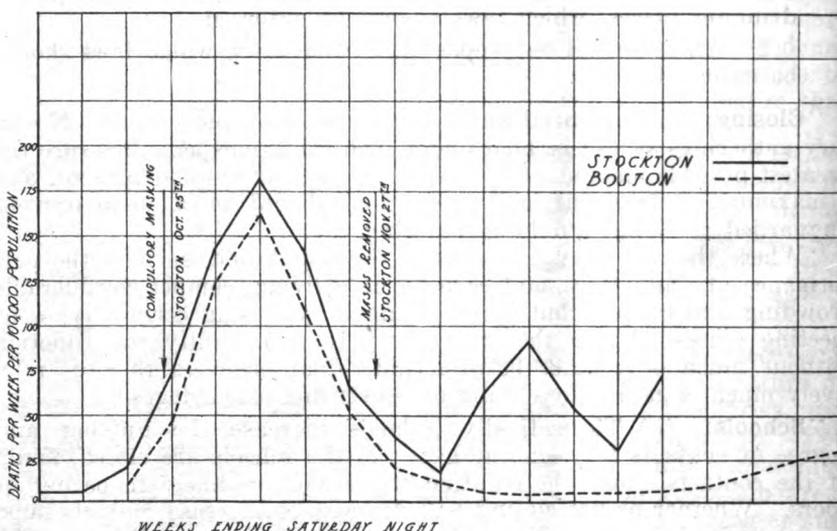


FIG. 17. Stockton, California, and Boston, Massachusetts. Comparative death rates per 100,000 population, by weeks. The use of masks was made compulsory in Stockton, but not in Boston.

“Isolation: The isolation of patients suffering from influenza should be practised. In cases of unreasonable carelessness, it should be legally enforced most rigidly.

“Placarding: In cases of unreasonable carelessness and disregard of the public interests placarding should be enforced.

“Coughing and Sneezing: Laws regulating coughing and sneezing seem to be desirable for educational and practical results.

“Terminal Disinfection: Terminal disinfection for influenza has no advantage over cleaning, sunning and airing.

“Alcohol: The use of alcohol serves no preventive purpose.

“Sprays and Gargles: Sprays and gargles do not protect the nose and throat from infection, for the following reasons:

(a) So far as the knowledge of the committee extends, no germicide strong enough to destroy infective organisms can be applied to the nose and throat without at the same time injuring the mucous membranes.

(b) Irrigation of the nose and throat to accomplish the complete mechanical removal of the infective organism is impracticable.

(c) Their use tends to remove the protective mucus, to spread the infection and to increase the liability of actual entrance of the infective organisms.

(d) Their domestic use is liable to lead in families to a common employment of the same utensils.

(e) The futility of sprays and gargles has been demonstrated with respect to certain known organisms such as the diphtheria bacillus and the meningococcus."

MEASURES ADOPTED IN CALIFORNIA.

The measures put into effect by the California State Board of Health to date are the following:

1. Disease made reportable: September 27, 1918.
2. Disease made isolatable: September 27, 1918.
3. Measures for the education of the public in personal hygiene and prophylaxis, including newspaper publicity and the distribution of circulars, 200,000 of which were sent out to the local health officers, to industrial plants, shipyards, Red Cross Chapters, all postmasters in California and to many public organizations.
4. The wearing of masks required by certain individuals under certain circumstances.
5. Recommendation that theaters and movies be closed.
6. Closure of saloons and other public places in certain localities where local control not effective.
7. Assistance to local health officers in carrying out measures desired by them but impossible of fulfillment without a state order.
8. Representatives sent to many towns to advise with local authorities and aid them in organizing local control and relief work.
9. Employment of nurses and doctors, both through the aid and co-operation of the American Red Cross and the U. S. Public Health Service, and independently from state emergency funds.
10. Numerous telegrams and circular letters containing suggestions for the guidance of local health officers sent out.

SUMMARY.

If the reader has carefully read this article up to this point he will be prepared for the disappointing lack of definite recommendations made for the help of local health officials who have to face the demand for action from their people. The writer attended the convention of the American Public Health Association and the meeting of the conference of State and Provincial Health Authorities in Chicago, where he had the opportunity of personally conferring with such men as Surgeon General Rupert Blue of the United States Public Health Service, Dr. W. H. Park of New York City Health Department, Dr. E. C. Rosenau of the Mayo Clinic, Rochester, Minn., Dr. G. W. McCoy, Director of the Hygienic Laboratory, United States Public Health Service, Washington, Dr. A. L. McLaughlin of the United States Public Health Service, Dr. W. C. Woodward, Commissioner of Health,

Boston, Mass., and Dr. Eugene R. Kelley, State Commissioner of Health, Boston, Mass. He has further had the advantage of association with members of the California State Board of Health, all of high standing as practitioners of medicine; with the scientific staff of the California State Board of Health, its epidemiologists, bacteriologists and professionally trained health officers. It can, therefore, be stated with no possibility of intelligent contradiction, since there is not the slightest dissension in the state organization on any of these subjects, that the few measures herewith recommended are all that our present day knowledge of the disease warrants us in making. Health officers who choose to extend this list are at liberty to do so without interference from the State Board of Health, but whenever they feel impelled to wonder why the board does not do this or that they should remember that if all the various measures urged upon the board were adopted, California would find itself in a most tangled net of health regulations, *such as would hinder the operation of the few intelligent measures we have*, and make us an object of ridicule abroad.

SUGGESTIONS FOR LOCAL HEALTH AUTHORITIES.

Some of these are more than suggestions, being requirements of the State Board of Health.

1. Enforce the prompt reporting of cases.
2. Enforce the immediate isolation of cases.
3. Organize and maintain machinery for the proper care of the sick, the furnishing of medical and nursing services, the provision of hospital facilities, and distribution of general community relief.
4. Close schools unless adequate nursing or medical inspection services available.
5. Close unnecessary public gatherings, especially in smaller and rural communities; (not, however, very effective in larger cities).
6. Enforce the state regulation regarding the wearing of masks.
7. Enforce the state law requiring sterilization of drinking receptacles.
8. Enforce the state law regarding expectoration in public places.
9. **Health officers should give publicity to the fact that the burden of responsibility in the control of influenza rests, after all, chiefly upon the people themselves. The difficulty in framing intelligent quarantine measures and the difficulties in diagnosis make it imperative that each citizen should be alive to his responsibilities to the rest of the community. People should remain at home whenever suffering from a cold, even though they have no suspicion that they may have influenza. The isolation of cases is undoubtedly of first importance and this is, after all, largely a matter of education of the general public, with voluntary observance of the common sense demands of the situation on their part.**
10. Health officers and legislative bodies are invited to call upon the California State Board of Health for aid in solving their local problems, and in furtherance of this desire the Board stands ready to send a representative, when desired, for consultation.

COMMUNICATIONS RELATIVE TO INFLUENZA CONTROL SENT BY CALIFORNIA STATE BOARD OF HEALTH TO CITY AND COUNTY HEALTH OFFICERS.

September 27, 1918.

To City and County Health Officers:

Under Section 2979 of the Political Code, influenza is hereby made reportable and isolatable in California. You are therefore authorized to require the isolation of cases appearing in your community, it being hoped in this manner to check the rapid spread of the disease, which otherwise appears inevitable. All cases should be reported on the regular weekly report blank, the same as any other cases of communicable disease.

Spanish influenza appears to be the same infection which has previously visited this country in pandemic form. The term "Spanish" has been applied to it during its present appearance by reason of its ravages in Spain, prior to its extension to the rest of Europe and now to the western hemisphere. The disease in the present pandemic seems to exhibit an unusual virulence, and is extremely prone to pneumonic complications. The gravity of the situation on the eastern seaboard prompts us to adopt all the measures that are at our command for its control on this coast.

Very truly yours,

W. H. KELLOGG, Secretary.

TELEGRAM TO CITY HEALTH OFFICERS.

October 8, 1918.

You are advised to use every effort to locate and isolate influenza cases, particularly recent arrivals from the East. Keep this office informed of situation.

W. H. KELLOGG.

California State Board of Health
Sacramento.

October 10, 1918.

To Local Health Officers:

To aid you still further in the perplexing problems arising by reason of the appearance of Spanish influenza, you are advised to handle the matter of quarantine as a simple isolation and not of complete quarantine.

In other words, infected individuals should be required to remain at their homes and if possible in a separate room from the rest of the family, and the family should be instructed to avoid unnecessarily close contact with the patient and to be particularly careful to guard their faces with a clean handkerchief or gauze mask when in immediate association with the patient.

Placarding of the house is not necessary and patients may be released within a reasonable period after subsidence of temperature, symptoms and cessation of discharges from the nose. An arbitrary isolation period has not been established but you are empowered whenever you feel that cases are being released too early to impose a detention period of ten days.

It is very important that school teachers be instructed to exclude immediately all children showing signs of acute cold or the characteristic symptoms of fever and aching of the limbs. If this is carried out there will, in the vast majority of cases, be no necessity for closing the schools. A much more valuable measure than closing the schools would be the closing of moving picture shows and this is advised when the epidemic exhibits a tendency to spread rapidly, and involve a large number of persons.

In the smaller communities particularly, it is suggested that the health officer form a committee of interested citizens who will, as temporary deputy health officers, assist him in sending to their homes persons found associating with the public and who are plainly influenza victims.

Very truly yours,

W. H. KELLOGG, M. D., Secretary.

California State Board of Health
Sacramento.

October 11, 1918.

To all Health Officers:

The Surgeon General of the Public Health Service informs me that a mobilization of the Volunteer Medical Service Corps for aid in combatting influenza is being arranged for by that service and Red Cross nurses and emergency hospital supplies will be furnished upon specific requests from that service.

All appeals for aid *must be made* to the State Board of Health, which will transmit the request to the Surgeon General.

On account of the great scarcity of nurses at the present time it is quite likely that many requests will be made which can not be complied with and you are, therefore, requested to ask for aid only in case of real emergency.

I would again emphasize the importance of your requiring a strict reporting of all cases by physicians in your territory, and the prompt isolation in their homes of all cases of influenza. I do not advise the closing of schools except as a last resort, for the reason that the children will be safer from infection in a school from which all suspected cases of illness have been immediately sent home by the teacher, than they would if running free on the streets. Moving picture shows and like gatherings are a different matter and these should be closed as soon as evidence exists of a tendency to a rapid spread of the disease.

Please keep this office informed of the situation in your community.

Very truly yours,

W. H. KELLOGG, M. D., Secretary.

TELEGRAM TO CITY HEALTH OFFICERS.

October 11, 1918.

During present emergency please wire our expense daily report of influenza cases. Closing schools and moving picture shows may become necessary but not advised except as last resort. In schools if teachers carry out instructions to immediately exclude all sick children we believe better results will be obtained by keeping them open.

W. H. KELLOGG.

California State Board of Health
Sacramento.

October 15, 1918.

To Health Officers:

One of the most common ways that influenza is contracted is by means of the common drinking cup. What is being done in your territory for the enforcement of the law, chapter 744, statutes of 1917? The roller towel, too, is a factor in the spread of the disease.

Will you not take this matter up with the newspapers published in the territory over which you have jurisdiction, advising the public of the necessity for the enforcement of the laws pertaining to common drinking cups and roller towels? A copy of the roller towel act, together with a copy of the regulations for the enforcement of chapter 744 are enclosed.

We are sending under separate cover posters relative to influenza, how to avoid it and how to care for those who have it. These should be posted in conspicuous places in your city. The State Board of Health will endeavor to keep you fully informed at frequent intervals about the present pandemic. Will you kindly co-operate with us by sending in your reports PROMPTLY? Whenever a large number of cases occur a *night letter* should be sent to the State Board of Health, collect. Full information is also desired relative to the prevalence of pneumonia; and we also desire to know the numbers of deaths from both pneumonia and influenza, as they occur.

Very truly yours,

CALIFORNIA STATE BOARD OF HEALTH,
GUY P. JONES, Assistant to the Secretary.

TELEGRAM TO CITY HEALTH OFFICERS.

October 15, 1918.

Please send night letter collect stating number deaths from pneumonia and influenza each day beginning October first. Hereafter include in night letter each day number cases influenza and pneumonia, also number deaths each disease.

STATE BOARD OF HEALTH.

California State Board of Health
Sacramento.

October 19, 1918.

To City and County Health Officers:

At a special meeting of the California State Board of Health held in San Francisco, October 18, recommendations defining the attitude of the board concerning measures to be recommended in the present emergency, due to the widespread outbreak of influenza, were made. These consist of:

1. The dissemination, among the people to the widest extent, of knowledge concerning those measures of personal hygiene which can be adopted to protect them against infection, and to aid them in avoiding infecting others. For this purpose, a circular letter is being printed and distributed to all local health officers.

2. The isolation of cases. It is the duty of every person so soon as he suspects he is developing the disease, to immediately retire to his home, and all cases at home should be isolated as far as possible, from the rest of the family. No rigid quarantine is advised, nor is placarding of houses necessary.

3. It is recommended that face masks of gauze be worn by all persons who must of necessity come in contact with known cases of influenza. This measure is particularly valuable for nurses and for the well members of the family in which cases of influenza exist. These masks are conveniently and cheaply made of two layers of absorbent gauze, large enough to cover the entire face, and are made in a square shape, with a binding of some colored material around the edge on one side. This colored margin should be worn outwardly and is for the purpose of insuring the application of the mask always with the same side toward the face. The mask is held on by means of a piece of tape from each of the four corners converging to a rubber band on the back, to which they are attached. Each person should have his own mask, and they should never be interchanged. The object of the mask is to stop the fine particles of moisture which carry the germs of the disease, and which are expelled from the mouths of the infected individuals, and which may float a distance of several feet in front of the person from whom they originate.

4. It is recommended that moving picture shows and theaters be closed during the period of greatest virulence as evidenced by the rapid spread of cases.

5. In the opinion of the State Board of Health, schools should be kept open wherever the teachers can be relied upon to immediately exclude any child appearing with symptoms of any sort of illness. The well children in schools kept open in this manner will be much safer from contagion than if the schools were closed and they were free to associate on the streets. Churches, likewise, should not be required to close.

6. Strict enforcement of the existing laws and regulations concerning the sterilization of drinking glasses, the use of common towels, and expectoration in public places is urged, as these are the principal means, aside from close association with infected individuals and the inhalation of particles expelled by them during the acts of coughing, sneezing and talking.

7. It is particularly desirable that the public be not encouraged in acquiring a state of hysterical alarm concerning influenza. While the disease is of great importance on account of the extremely contagious nature, during the present epidemic, there is no reason for the people to become unduly alarmed because if those who are attacked by the infection will follow the instructions to immediately go to their homes and go to bed and call their physician, their chances of escaping the serious complication of pneumonia are very greatly increased.

8. The State Board of Health is working in co-operation with the Red Cross and the United State Public Health Service in the furnishing of physicians and nurses and hospital materials where needed in communities unable to cope with conditions with their own resources. All requests from communities finding their resources overtaxed should be addressed to the State Board of Health, Sacramento.

W. H. KELLOGG, M. D., Secretary.

California State Board of Health
Sacramento.

October 21, 1918.

To all City and County Health Officers:

Acting under authority of section 2979A of the Political Code, the wearing of gauze masks of approved design during the presence, in epidemic form, of influenza, will be required as follows:

1. Every doctor, nurse, attendant or visitor within a hospital, which cares for influenza cases, shall wear a mask of acceptable type while inside the building.

2. All members of every family in which a case of influenza exists shall wear, while in the vicinity of the infected person, a mask of approved type.

3. Every person suffering from a cold in the head or acute cough, or any of the other recognized symptoms of influenza or grippe shall wear a mask of approved type while outside their own living apartments.

An acceptable type of mask is made of from two to four layers of fine mesh gauze or six to eight layers of coarser gauze, or of three layers of butter cloth, 5x8 inches in size, and held firmly over the face by means of tapes attached to the corners.

Another acceptable type is made by folding cornerwise a clean closely woven handkerchief and tying two corners behind the head, the other corner falling below the chin, the upper margin crossing the face just below the eyes.

In many instances department store managers may be prevailed upon to require their clerks to wear them and it will be of the utmost value if barbers, dentists and particularly, druggists, would also wear them. The greatest publicity should be given to the mask as a preventive measure and the public encouraged to wear them generally both in and out of doors.

Very truly yours,

W. H. KELLOGG, M. D., Secretary.

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Stockton, Calif.

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