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HEALTH DEPARTMENT

District of Columbia

The Prevention of the Spread of Typhoid Fever

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Notes on the Prevention of the Spread of Typhoid Fever.

Typhoid fever is sometimes known as enteric fever and occasionally as abdominal typhus. Cases of so-called typho-malarial fever are generally to be regarded as cases of typhoid fever.

Every case of typhoid fever comes from some other case of the same disease.

Typhoid fever is due to the growth, within the body, of germs called typhoid baccilli. These germs find their way out of the body in the discharges from the bowels and bladder. It is only as particles from such discharges find their way into the stomach and bowels of individuals other than the patient that typhoid fever spreads.

Two condition are nescessary before a person can develop typhoid fever.

1. The germs which are capable of causing typhoid fever must find their way into his stomach and bowels in sufficient number to bring about that result.

2. The tissues of the body must be in such a condition as will permit these germs to grow.

The germs of typhoid fever are believed to enter the body only with food or drink except as careless nurses carry particles of excreta directly into their mouths by carelessness in disinfecting their hands.

Food or drink may become contaminated with the germs of typhoid fever in any of the following ways:

1. Urine and discharges from the bowels of patients suffering from typhoid fever may find their way into rivers,

lakes, springs, or wells, used as sources of drinking water or used without boiling to wash milk cans or to dilute milk.

2. Through imperfect disinfection of their hands, nurses and others having to handle typhoid fever patients may carry minute particles of the discharges from the bowels and bladders of such patients to food already cooked or which is to be eaten raw, or to milk or to drinking water.

3. Flies which light upon and which eat discharges from the bowels and bladders of typhoid fever patients may carry the infection from such discharges to food already cooked or which is to be eaten raw, or to milk or of drinking water.

4. The contents of box privies and of cesspools, containing discharges from the bowels and bladders of typhoid fever patients, and used for fertilizing vegetables, such as lettuce, celery, watercress, etc., which are eaten raw, may produce typhoid fever in the consumers of such vegetables.

5. Sewage contaminated with typhoid fever discharged in close proximity to oyster beds is liable to infect the oysters and render them agents for the dissemination of typhoid fever, if eaten raw.

The prevention of the spread of typhoid fever by the individual may be studied best as follows:

I. The prevention of the spread of the disease from the patient. This requires merely a prompt and thorough disinfection of all discharges from the bowels and bladders of patients suffering from that disease and of all articles to which such discharges may find their way even in the smallest particles.

II. The avoidance of contamination by the well. This necessitates the avoidance of all articles of food and of drink liable to have been infected by dis-

charges from the bowels or bladders of typhoid fever patients, unless such articles have been thoroughly cooked since exposure to infection.

I.

The disinfection of the discharges from the bowels and bladder of a patient suffering from typhoid fever and of articles liable to be soiled by him is best accomplished in one of the following ways:

1. Into the vessel into which discharges are to be received place a small quantity of a freshly made solution of chlorinated lime, made by adding a quarter of a pound of chlorinated lime to two quarts of water. After the discharges have been received pour over them a sufficient quantity of the same solution to make one quart or more. Mix the disinfecting solution and the material to be disinfected, and allow them to stand for at least thirty minutes before emptying. For the preparation of this disinfecting solution *standard chlorinated lime* is necessary; most of the material sold as *chloride of lime* is worthless for this purpose. It is best purchased in quarter pound boxes, so that but a small quantity of the disinfecting solution need be made each time. The whitish sediment which falls to the bottom of the vessel after the mixture is made does no harm and can be used along with the rest of the mixture.

2. Into the vessel in which discharges from the bowels and bladder are to be received pour a small quantity of a mixture of carbolic acid and water, made by adding twelve tablespoonfuls of carbolic acid to a gallon of water. When the fecal matter and urine has been deposited in the vessel, add enough more of the mixture to make at least a quart. Mix the disinfecting solution and the material to be disinfected and allow them to stand for at least four hours before emptying.

3. Add to the material to be disinfected not less than four times that quantity of boiling water, cover the vessel containing the mixture, and allow it to stand thirty minutes or more before it is emptied. In order for this method

of disinfection to be effective the water must be actually boiling when used.

Cloths used to wipe away the discharges from the body of the patient should be burned. If of too much value to be disposed of in this way they should be placed immediately in a cold mixture of carbolic acid and water, made by adding twelve tablespoonfuls of carbolic acid to one gallon of water, and allowed to remain in this mixture for not less than twelve hours. Sheets, night clothing, etc., should be disinfected in the same way before being placed in the wash. Such articles may, however, be disinfected equally as well by being boiled vigorously for half an hour if they are thoroughly submerged while boiling, but boiling will fix stains so that they cannot be removed, while soaking and rinsing in a cold carbolic solution is not so likely to do so.

The danger of soiling and of infecting the mattress will be very much lessened if it be covered with rubber sheeting.

Dishes, knives, forks, and spoons used by persons suffering from typhoid fever should be kept for the exclusive use of such persons and should not be removed from the room or rooms occupied by the patient. Dishes, forks, spoons, etc., before being returned to the general use of the family should be boiled at least five minutes in a solution of washing soda made by adding one tablespoonful of washing soda to each gallon of water. Knives and other articles which cannot be boiled without injury should be soaked for at least four hours in a carbolic solution, made by adding twelve tablespoonfuls of carbolic acid to each gallon of water; then in soapsuds; and finally in hot water.

The remains of food not eaten by the patient should be burned or thrown into a vessel containing one of the disinfecting solutions mentioned above and disinfected before being thrown away.

A nurse or other person handling a patient sick from typhoid fever after assisting in the use of the bed-pan and in similar ways should always wash her hands and rinse them in a disinfecting solution, either carbolic acid solution made by adding six tablespoonfuls of car-

bolic acid to a gallon of water, or a solution of bichloride of mercury made by adding one of the ordinary bichloride of mercury disinfecting tablets to a pint of water. Nurses and other such persons should keep their nails clean with a brush and nail cleaner and should always before eating wash the hands thoroughly with soap and hot water and disinfect them with one of the solutions mentioned above in this paragraph.

Practically all so-called disinfectants and germicides, sold under fancy names, such as Jones's Germidine and Brown's Bacteriol, are expensive and worthless. They should be avoided.

Disinfecting solutions should be kept about the sick room so that they can be conveniently and freely used. Unless their use is made easy it is apt to be neglected. A basin containing the disinfecting solution for the hands, a large bottle filled with disinfecting solution for use in the bed-pan and urinal, and a reasonable quantity of disinfecting solution in a wash boiler to receive bed clothing, etc., are usually absolutely necessary.

The admission of fresh air and sunshine into the sick room will tend to diminish the danger of the spread of typhoid fever, not only by insuring better cleaning of the apartment but also by the natural destruction of infectious matter.

Disinfectants will be supplied free to persons unable to pay for them. Application should be made to the Health Department, and must be accompanied by a letter from the attending physician certifying that the patient and those charged with his care are unable to pay for proper disinfectants. Persons needing liquid disinfectants, as carbolic acid and formalin, must bring suitable bottles.

The Health Department will, upon request, disinfect mattresses, blankets, etc., which have been used by patients suffering from typhoid fever and which cannot be soaked without in-

jury. It will disinfect the rooms occupied by such persons whenever there are reasonable grounds for believing that they have become infected. If proper care has been taken of a case of typhoid fever during its course there will usually be no necessity for disinfecting the sick room; ordinary methods of cleaning will be sufficient.

II.

The individual who would avoid contracting typhoid fever must see that his food and drink has not been exposed either directly or indirectly to that disease or, when this cannot be done, must see that it is subjected to a heat sufficient to kill any germs which may be in it. Raw food should be avoided, cooked food must have been kept out of the reach of flies, and water and milk must be boiled. In moist substances the germs which cause typhoid fever are killed by exposure for ten minutes to a temperature considerably below that of boiling water. Ordinarily, therefore, freshly cooked food is free from danger so far as relates to the spread of typhoid fever.