

Communicable diseases are those that are transmissible from one person, or animal, to another. The disease may be spread directly, via another species (vector) or via the environment. Illness will arise when the infectious agent invades the host, or sometimes as a result of toxins produced by bacteria in food.

The spread of disease through a population is determined by environmental and social conditions which favour the infectious agent, and the relative immunity of the population. An outbreak of infection could endanger the operation and safety of the ship. An understanding of the disease and the measures necessary for its containment and management is therefore important.

Infectious agents and examples of diseases

The organisms that cause disease vary in size from viruses, which are too small to be seen by a light microscope to intestinal worms which may be over a metre long. The groups of infectious agents are listed with examples of diseases they cause.

Bacteria

Pneumonia, tuberculosis, enteric fever, gonorrhoea

Viruses

Measles, varicella, influenza, colds, rabies

Fungi

Ringworm, tinea pedis (athlete's foot)

Protozoa

Malaria, giardia

Metazoa

Tapeworm, filariasis, onchocerciasis (river blindness), hookworm

Prions

Kuru, Creutzfeld-Jacob disease, Bovine spongiform encephalopathy (BSE)

Modes of transmission

Direct transmission

- Direct contact with the infected person as in touching, kissing or sexual intercourse
- Droplet spread through coughing/sneezing, talking or explosive diarrhoea
- Faecal-oral spread when infected faeces is transferred to the mouth of a non infected person, usually by hand.

Indirect transmission

- Indirect transmission of infectious organisms involves vehicles and vectors which carry disease agents from the source to the host.

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Hepatitis (viral)

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Measles

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Mumps

Plague

Poliomyelitis

Rabies

Scarlet fever

Tetanus

Tuberculosis

Typhus fever

Whooping cough (Pertussis)

Yellow fever

Sexually transmitted diseases including HIV (AIDS)

NOTE. Other communicable diseases such as Lassa Fever do not fall within the competence of this book. When in doubt notify the Port Health Officer.

WITHDRAWN
PUBLICATION

Vehicles are inanimate or non-living means of transmission of infectious organisms. They include:

- Water. If polluted, specifically by contaminated sewage. Water is the vehicle for such enteric (intestinal) diseases as typhoid, cholera, and amoebic and bacillary dysentery.
- Milk is the vehicle for diseases of cattle transmissible to man, including bovine tuberculosis, brucellosis. Milk also serves as a growth medium for some agents of bacterial diseases such as campylobacter, a common cause of diarrhoea.
- Food is the vehicle for salmonella infections (which include enteric fever), amoebic dysentery, and other diarrhoeal diseases, and poisoning. Any food can act as a vehicle for infection especially if it is raw or inadequately cooked, or improperly refrigerated after cooking, as well as having been in contact with an infected source. The source may be another infected food, hands, water or air.
- Air is the vehicle for the common cold, pneumonia, tuberculosis, influenza, whooping cough, measles, and chickenpox. Discharges from the mouth, nose, throat, or lungs take the form of droplets which remain suspended in the air, from which they may be inhaled.
- Soil can be the vehicle for tetanus, anthrax, hookworm, and some wound infections.
- Fomites. This term includes all inanimate objects, other than water, milk, food, air, and soil, that might play a role in the transmission of disease. Fomites include bedding, clothing and the surface of objects.

Vectors are animate or living vehicles which transmit infection in the following ways:

- Mechanical transfer. The contaminated mouth-parts or feet of some insect vectors mechanically transfer the infectious organisms to a bite-wound or to food. For example, flies may transmit bacillary dysentery, typhoid, or other intestinal infections by walking over an infected faeces and later leaving the disease-producing germs on food.
- Insect harborage. Certain insects harbour pathogenic (disease causing) organisms in their intestinal tracts. The organisms are passed in the faeces or are regurgitated by the vector, and the bite-wounds or food are contaminated. (e.g. plague, typhus.)
- Biological transmission. This term refers to multiplication of the infectious agent during its stay in the body of the vector. The vector takes in the organism along with a blood meal but is not able to transmit infection until after a definite period, during which the pathogen changes. The parasite that causes malaria is an example of an organism that completes the sexual stages of its life cycle within its vector, the mosquito. The virus of yellow fever also multiplies in the bodies of mosquitoes.

Terms used in connection with communicable diseases

A *carrier* is a person who has the infection, either without becoming ill himself or following recovery from it.

A *contact* is a person who may have been in contact with an infected person.

The *incubation period* is the interval of time that elapses between a person being infected with any communicable disease and the appearance of the features of that disease. This period is very variable and depends upon the infectious agent and the inoculum (the amount of the infectious agent).

The *isolation period* signifies the time during which a patient suffering from an infectious disease should be isolated from others.

The *period of communicability* is the time during which a patient who may be incubating an infectious disease following contact can communicate the disease to others.

The *quarantine period* means the time during which port authorities may require a ship to be isolated from contact with the shore. Quarantine of this kind is seldom carried out except when serious epidemic diseases, such as, for instance, plague, cholera, or yellow fever are present or have recently occurred on board.

Symptoms and signs

In reality it is often very difficult to make an accurate diagnosis of an infectious disease without laboratory investigations. It may be possible if there are very specific features such as a rash (varicella) or cluster of suggestive features (regular fever, enlarged spleen and history of mosquito bites in an endemic area). Because of the difficulty in making an accurate diagnosis on board ship you may have to give a variety of treatments each directed at different infectious agents.

Onset

Almost all communicable diseases begin with the patient feeling unwell and perhaps a rise in temperature. This period may be very short, lasting only a few hours (meningococcal sepsis), or more prolonged (hepatitis). In some diseases the onset is mild and there is not much general disturbance of health, whereas in others it is severe and prostrating. During the onset it is rarely possible to make a diagnosis.

The rash

The diagnosis of some communicable diseases is made easier by the presence of a characteristic rash. In certain diseases (e.g. scarlet fever) the rash is spread evenly over the body, in others it is limited to definite areas. When examining an individual suspected to be suffering from a communicable disease, it is of great importance to strip him completely in order to get a full picture of any rash and its distribution.

General rules for the management of communicable diseases

Isolation

The principles of isolation are described in Chapter 3 and Chapter 5. If you have a suspicion that the disease with which you are dealing is infectious it is advisable to involve isolation precautions as soon as possible.

Treatment

An essential element in treatment is maintaining the patient's well being. This is achieved through good general nursing and it is important to ensure that the patient does not become dehydrated.

Advice on specific medical treatment for infectious diseases which are likely to respond to specific drugs is given under the sections on treatment for the individual diseases. You may also be advised to administer drugs to prevent secondary infection occurring.

See Chapter on General Nursing and on how to reduce a high fever.

Diet

Diet will very much depend on the type of disease and severity of fever. Serious fever is invariably accompanied by loss of appetite and this will automatically tend to restrict diet to beverages such as water flavoured with lemon juice and a little sugar or weak tea with a little milk and perhaps sugar.

Essential basic rules

- Isolate. If anyone suffers from a temperature without obvious cause it is best to isolate him until a diagnosis has been made.
- Strip the patient and make a thorough examination looking for any signs of a rash in order to try to establish the diagnosis.
- Put him to bed, and appoint someone to look after and nurse the patient.
- Give non-alcoholic fluids in the first instance.
- If his temperature exceeds 39.4C make arrangements for tepid sponging.

- Arrange for the use of a bed pan and urine bottle if the patient shows any sign of prostration or if his temperature is high.
- If the patient is seriously ill and if in any doubt as to the diagnosis seek **RADIO MEDICAL ADVICE**, failing which you should consider the need for making for port.
- Treat symptoms as they arise.

Do not attempt to get the patient up during convalescence if he is feeble, but keep him in bed until the next port is reached.

When approaching port, send a radio message giving details of the case to enable the Port Health Authority to make arrangements for the isolation of the case and any contacts on arrival and Disinfection.

Immunisation and travel advice

It is important that up to date advice on immunisation and the prevalent diseases should be obtained before arrival in a foreign port. This is most easily available from the following publications:

Health Information for Overseas Travel, produced by the UK Department of Health, and *International Travel and Health*, WHO, Geneva

WITHDRAWN PUBLICATION

Anthrax
 French: *Charbon* German: *Mazbrand* Italian: *Carbuncolo* Spanish: *Carbon*
Incubation Period: 2 to 7 days, usually 2
Period of communicability: No evidence of transmission from person to person
Isolation Period: No evidence of transmission from person to person
Quarantine Period: None

Anthrax is a common but serious communicable disease which may occur in man and animals. It occurs in man either as an infection of the skin (malignant pustule), or as an attack on the lungs or intestines, or as a widely spread infection throughout the body by means of the blood circulation.

Anthrax is, in man, usually contracted by handling infected animals, skins, hides, or furs. It can also be conveyed by the consumption of infected or insufficiently cooked meat, or by the inhalation of dust containing the organism.

Symptoms and signs

In most cases anthrax is accompanied by severe symptoms such as fever and prostration. When it appears as a skin infection, it begins as a red itching pimple which soon changes into a blister and within the next 36 hours progresses into a large boil with a sloughing centre surrounded by a ring of pimples. Alternatively it may take the form of a painless widespread swelling of the skin which shortly breaks down to form pus in the area.

The gastro-intestinal form of anthrax resembles food poisoning with diarrhoea and bloody faeces. The lung form develops into a rapidly fatal pneumonia.

Treatment

Should a case of anthrax occur at sea, which is unlikely unless as a result of handling animals, hides, skins, etc., all dressings or other material that come into contact with the discharge must be burnt or disposed of by disinfection.

Instruments must be used to handle dressings as far as possible, and the instruments must subsequently be sterilised by vigorous boiling for not less than 30 minutes, since the spores of the anthrax germ are difficult to kill.

Treatment is not easy on board and the patient should be put ashore as soon as possible. In the meantime treatment is with Penicillin

No attempt at surgical treatment (incision or lancing of the sore) should be made as it does no good. Cover the sore with a dressing.

Seek advice from a Port Health Authority about the treatment of cargo.

Cellulitis (Erysipelas)

French: Erysipèle German: Erysipel Italian: Erisipela Spanish: Erisipela

Incubation Period: 1 to 7 days

Period of communicability: None

Isolation Period: None

Quarantine Period: None

This disease is an acute inflammatory condition of the skin caused by a germ entering the body through a scratch or abrasion. Cellulitis occurs anywhere, but most commonly on the legs, arms and face.

The onset is sudden with shivering, and a general feeling of malaise. The temperature rises rapidly and may reach about 40°C. The affected area becomes acutely inflamed and red on the first or second day of the infection and the inflammation spreads rapidly outwards with a well-marked, raised, and advancing edge. As the disease advances the portions of the skin first attacked become less inflamed and exhibit a yellowish appearance. Blisters may appear on the inflamed area which can be very painful.

General treatment

The patient must be kept in bed during the acute stage.

Specific treatment

Give the patient benzyl penicillin 600 mg followed by broad-spectrum antibiotic treatment. Paracetamol can be given to ease the pain.

Chickenpox (Varicella)

French: *Varicelle* German: *Windpocken* Italian: *Varicella* Spanish: *Varicela*

Incubation Period: 10 to 21 days, usually 14

Period of communicability: Up to 5 days before the onset of the rash and 5 days after the first crop of vesicles

Isolation Period: Until the vesicles become dry

Quarantine Period: None

This highly infectious disease starts with fever and feeling unwell. Within a day or two the rash appears on the trunk but soon spreads to the face and elsewhere, even sometimes to the throat and palate.

The rash starts as red pimples which quickly change into small blisters (vesicles) filled with clear fluid which may become slightly coloured and sticky during the second day. Within a day or two the blisters burst or shrivel up and become covered with a brownish scab. Successive crops of spots appear for up to five days. Although usually a mild disease, sometimes the rash is more severe and very rarely pneumonia may occur.

Treatment

A member of the crew who has had chickenpox, and therefore has immunity, could make a suitable nurse. If all of the crew have had chickenpox in the past then there is no need to isolate the patient. The patient need not be confined to bed unless he is unwell. He should be told not to scratch, especially not to scratch his face otherwise pock marks may remain for life. Calamine lotion, if available, dabbed onto the spots may ease the itching.

Cholera

French: *Choléra* German: *Cholera* Italian: *Coléra* Spanish: *Cólera*
Incubation Period: 1 to 5 days, usually 2–3 days
Period of communicability: Usually for a few days after recovery
Isolation Period: Until diarrhoea has settled
Quarantine Period: 5 days

Cholera is a severe bacterial infection of the bowel producing profuse watery diarrhoea, muscular cramps, vomiting and rapid collapse. Infection occurs principally through drinking infected water and sometimes through eating contaminated uncooked vegetables, fruit, shell fish or ice cream. It generally occurs in areas where sanitation is poor and where untreated sewage has contaminated drinking water. Other bacterial and viral causes of diarrhoea can sometimes produce a similar clinical picture and may be just as severe.

Symptoms and signs

Most cases are mild and will not be differentiated from any other form of diarrhoea. In a severe case the onset is abrupt, the vomiting and diarrhoea extreme with the faeces at first yellowish and later pale and watery, containing little white shreds of mucus resembling rice grains. The temperature is below normal, and the pulse rapid and feeble.

The frequent copious watery faeces rapidly produce dehydration. Vomiting is profuse, first of food but soon changing to a thin fluid similar to the water passed by the bowel. Cramps of an agonising character attack the limbs and abdomen and the patient rapidly passes into a state of collapse.

As the result of the loss of fluid, the cheeks fall in, the eyes become shrunken and the skin loses its normal springiness and will not quickly return to its normal shape when pinched.

The body becomes cold and covered with a clammy sweat, the urine is scanty, the breathing rapid and shallow and the voice is sunk to a whisper. The patient is now restless with muscle cramps induced by loss of salt and feebly complaining of intense thirst.

His face may rapidly terminate in death or equally rapidly turn to convalescence. In the latter case the cessation of vomiting and purging and the return of some warmth to the skin will herald convalescence.

Treatment

If there is a suspected case of cholera on board **RADIO MEDICAL ADVICE ON MANAGEMENT SHOULD BE OBTAINED PROMPTLY.**

The patient should be isolated and put to bed at once. Every effort should be made to replace fluid and salt loss. Therefore, keep a fluid balance chart. The patient should be told that his life depends on drinking enough and he should be encouraged and if necessary almost forced to drink as much as possible until all signs of dehydration disappear (until his urine output is back to normal). Thereafter he should drink about 300 ml after each stool until the diarrhoea stops. It is best to drink oral rehydration solution (ORS), if this is not available, make up a solution from 20 gm of sugar with a pinch of salt and a pinch of sodium bicarbonate and juice from an orange in 500 ml sterile water.

Give Doxycycline 200 mg first dose then 100 mg once daily. If vomiting, give an anti-emetic tablet or injection before each dose. The patient must be kept in bed until seen by a doctor.

Caution

Cholera is a disease which is transmitted from person to person. If cholera is suspected, the ship's water supply must be thoroughly treated to make sure that it is safe. The disposal of infected faeces and vomit must be controlled carefully since they are highly infectious. The hygiene precautions of all attendants must be of an order to prevent them also becoming infected and all food preparation on board must be reviewed.

Dengue fever

French: Dengue

German: Denguefieber; Siebentagefieber

Italian: Dengue; Febbra dei sette giorni

Spanish: Fiebre dengue

Incubation Period: 3 to 14 days, usually 7 to 10 days.

Period of communicability: No person to person transmission. Infective for mosquitoes for about 5 days from just before the end of the febrile period.

Isolation Period: None

Quarantine Period: None

This is an acute fever of about 7 days' duration conveyed by a mosquito. It is sometimes called break-bone fever. It is an unpleasant, painful disease which is rarely fatal. A severe form of the disease, dengue haemorrhagic fever, can occur in children. Features of the disease are its sudden onset with a high fever, severe headache and aching behind the eyeballs, and intense pain in the joints and muscles, especially in the small of the back. The face may swell up and the eyes suffuse but no rash appears at this stage. Occasionally an itchy rash resembling that of measles but bright red in colour appears on the fourth or fifth day of the illness. It starts on the hands and feet from which it spreads to other parts of the body, but remains most dense on the limbs. After the rash fades, the skin dries and the surface flakes.

After about the fourth day the fever subsides, but it may recur some three days later before subsiding again by the tenth day.

General treatment

There is no specific treatment, but paracetamol will relieve some of the pain, and calamine lotion, if available, may ease the itching of the rash. Control is by removal of *Aedes* mosquitoes.

Diphtheria

French: Diphthérie

German: Diphtherie

Italian: Difterite

Spanish: Difteria

Incubation Period: 2 to 5 days

Period of communicability: Usually less than 2 weeks, shorter if the patient receives antibiotics

Isolation Period: 2 weeks

Quarantine Period: None

Diphtheria is an acute infectious disease characterised by the formation of a membrane in the throat and nose. The onset is gradual and starts with a sore throat and fever accompanied by shivering. The throat symptoms increase, swallowing being painful and difficult, and whitish-grey patches of membrane become visible on the back of the throat, the tonsils and the palate. The patches look like wash leather and bleed on being touched. The neck glands swell, and the breath is foul. The fever may last for two weeks with severe prostration. Bacterial toxins may cause fatal heart failure and muscle paralysis.

General treatment

Immediate isolation is essential as diphtheria is very infectious, the infection being spread by aerosols.

Specific treatment

Specific treatment is diphtheria anti-toxin which should be given at the earliest possible opportunity if the patient can get to medical attention. Antibiotic treatment should be given to all cases to limit the spread of infection but it will not neutralise toxin which has already been produced.

Enteric fever – typhoid

French: *Fièvre typhoïde*

Italian: *Febbre tifoidea*

Incubation Period: 1 to 3 weeks, depending on size of infecting dose

Period of communicability: Usually less than 2 weeks. Prolonged carriage of salmonella typhi may occur in some of those not treated.

Isolation Period: Variable.

Quarantine Period: None

German: *Typhus abdominalis*

Spanish: *Fiebre tifoidea*

The term enteric fever covers typhoid and para-typhoid fevers. Enteric fever is contracted by drinking water or eating food that has been contaminated with typhoid germs. Seafarers are advised to be very careful where they eat and drink when ashore. Immunisation gives reasonable protection against typhoid but not para-typhoid.

In general the para-typhoids are milder and tend to have a shorter course.

The disease may have a wide variety of symptoms depending on the severity of the attack. Nevertheless, typhoid fever, however mild, is a disease which must be treated seriously, not only because of its possible effect upon the patient, but also to prevent it spreading to others who may not have been immunised. Strict attention must be given to hygiene and cleanliness and all clothing and soiled linen must be disinfected.

During the first week the patient feels off-colour and apathetic, he may have a persistent headache, poor appetite and sometimes nose bleeding. There is some abdominal discomfort and usually constipation. These symptoms increase until he is forced to go to bed. At this stage his temperature begins to rise, it stops reaching about 38-40°C in the evenings. For about two weeks it never drops back to normal even in the mornings.

Any person who is found with a persistent temperature of this kind should always be suspected of having typhoid, especially if his pulse rate remains basically normal. In 10 to 20% of cases from about the seventh day characteristic rose-pink spots may appear on the lower chest, abdomen and back which if pressed with the finger will disappear and return when pressure is released. Each spot lasts about 5 days and they continue to appear in crops until the end of the second week or longer. Search for them in good light, especially in dark-skinned races. During the second week, mental apathy, confusion and delirium may occur. In the more favourable cases the patient will commence recovery but in the worst cases his condition will continue to deteriorate and may terminate in deep coma and death. Even where the patient appears to be recovering, he may suffer a relapse. There are a variety of complications but the most dangerous are haemorrhage from, or perforation of, the bowel. Where the faeces are found to contain blood at any stage of the disease the patient must be kept as immobile as possible and put on a milk and water diet. If the bowel is perforated, peritonitis will set in.

General treatment

Anyone suspected of having typhoid or para-typhoid fever should be kept in bed in strict isolation until seen by a doctor. The patient's urine and faeces are highly infectious, as may be his vomit. These should all be disposed of. The attendants and others coming into the room should wash their hands thoroughly after handling the bedpan or washing the patient, and before leaving the room.

The patient should be encouraged to drink as much as possible and a fluid input/output chart should be maintained. He can eat as much as he wants, but it is best if the food is light.

Specific treatment

If you suspect somebody has enteric fever get **RADIO MEDICAL ADVICE**. Give ciprofloxacin 500 mg every 12 hours for one week. On this treatment the fever and all symptoms should respond within 4-5 days.

All cases should be seen by a doctor at the first opportunity. The case notes including details of the amount of medicine given should be sent with the patient.

German measles – rubella

French: *Rubéole* German: *Röteln* Italian: *Rosolia* Spanish: *Rubéola*

Incubation Period: 14 to 23 days, usually 17

Period of communicability: For about 1 week before to at least 4 days after the onset of the rash

Isolation Period: Until 7 days from the appearance of the rash

Quarantine Period: None

German measles is a highly infectious, though mild disease. It has features similar to those of mild attacks of ordinary measles or of scarlet fever. For the differences in symptoms and signs see the table.

Usually the first sign of the disease is a rash of spots, though sometimes there will be headache, stiffness and soreness of the muscles, and some slight fever preceding or accompanying the rash. The rash is absent in half the cases and lasts from 5 to 6 days.

The glands towards the back of the neck are swollen and can easily be felt. This is an important distinguishing sign. This swelling will precede the rash by up to 10 days.

General treatment

Give the patient paracetamol, and calamine lotion, if available, for the rash.

Specific treatment

NOTE: Particular care should be taken to isolate patients with German measles from pregnant women: Any pregnant woman on board should see a doctor as early as possible so that her immunity to rubella can be confirmed. If a patient has seen his wife in the last week he should be asked whether his wife might be pregnant. If so, his wife should be advised to see her doctor.

Glandular fever – infectious mononucleosis

French: *Fièvre glandulaire (Mononucleose infectieuse)*

German: *Drüsenfieber; Infektiöse Mononukleose*

Italian: *Febbre ghiandolare (Mononucleosi infettiva)*

Spanish: *Fièvre glandular (Mononucleosis infecciosa)*

Incubation Period: 4 to 6 weeks

Period of communicability: Prolonged, excretion of virus may persist for a year or more

Isolation Period: None

Quarantine Period: None

This malady is an acute infection which is most likely to affect the young members of the crew. Convalescence may take up to two or three months.

The disease starts with a gradual increase in temperature and a sore throat; a white covering often develops later over the tonsils. At this stage it is likely to be diagnosed as tonsillitis and treated as such. However it tends not to respond to such treatment and, during this time, a generalised enlargement of glands occurs. The glands of the neck, armpit and groins start to swell, and become tender; those in the neck to a considerable extent. The patient may have difficulty in eating or swallowing. His temperature may go very high and he may sweat profusely. Occasionally there is jaundice between the fifth and fourteenth day. Commonly there is a blotchy skin rash on the upper trunk and arms at the end of the first week. Vague abdominal pain is sometimes a feature. A diagnosis of diphtheria may be considered due to the appearance of the tonsils, but the generalised glandular enlargement is typical of glandular fever.

General treatment

Paracetamol should be given to relieve pain and to moderate the temperature. Any antibiotics which have been prescribed to treat the tonsillitis should be discontinued.

There is no specific treatment. If complications arise get **RADIO MEDICAL ADVICE**.

Hepatitis (viral)

French: *Hépatite*; German: *Hepatitis*; Italian: *Epatite*; Spanish: *Hepatitis*
Incubation Period: 15 to 50 days for hepatitis A, 60 to 90 days for hepatitis B (may be much longer)

Period of communicability: None after jaundice has appeared in hepatitis A, can be indefinite for hepatitis B

Isolation Period: During first week of illness

Quarantine Period: None

This is an acute infection of the liver caused by viruses. There are two main causes of acute hepatitis: hepatitis A and hepatitis B. Two other viruses may cause hepatitis (C and E), but these are uncommon. The most likely cause will be hepatitis A and this is spread by the faecal-oral route (as is hepatitis E). Hepatitis B is spread sexually or by contaminated blood or needles. There is no way of differentiating one type of viral hepatitis from another. The urine and faeces will show the typical changes associated with jaundice.

Treatment

There is no specific treatment. The patient should be put to bed and nursed in isolation. Plenty of sweetened fluids should be given until the appetite returns. When the appetite returns a few sweets should be given. Alcohol should be allowed. All cases must be seen by a doctor at the next port.

Influenza

French: *Grippe*; Italian: *Influenza*

German: *Epidemische Influenza*; Spanish: *Influenza*; *Grippe*

Incubation Period: 1 to 5 days

Period of communicability: 3 to 5 days (7 in children) from the onset of illness

Isolation Period: Often impractical because of the delay in diagnosis. In an outbreak it would be advisable to keep all affected individuals together and away from those who are well

Quarantine Period: none

This is an acute infectious disease caused by a germ inhaled through the nose or mouth. It often occurs in epidemics. The onset is sudden and the symptoms are, at first, the same as those of the common cold. Later the patient feels much worse with fits of shivering, and severe aching of the limbs and back. Depression, shortness of breath, palpitations, and headaches, are common.

Influenza may vary in severity. Commonly a sharp unpleasant feverish attack is followed by a prompt fall in temperature and a short convalescence. Pneumonia is a possible complication.

General treatment

The patient should be subject to standard isolation. He should be watched for signs of pneumonia such as pains in the chest, rapid breathing and a bluish tinge to the lips. He should be given plenty to drink and a light and nutritious diet if he can manage it.

Specific treatment

There is no specific treatment for the uncomplicated case, but the patient should be given paracetamol as needed.

Malaria

French: *Paludisme* German: *Malaria* Italian: *Malaria* Spanish: *Paludismo*

Incubation Period: 12 days or more, depending on the type of malaria

Period of communicability: The patient will remain infectious for mosquitoes until they have been completely treated

Isolation Period: None if in mosquito-proof accommodation

Quarantine Period: None

Malaria is a recurrent fever caused by protozoa introduced into the blood stream by the bite of the Anopheles mosquito. The malaria-carrying mosquito is most prevalent in districts where there is surface water on which it lays its eggs. It is a dangerous tropical disease which causes fever, debility and, sometimes, coma and death.

Malarial areas

Ports between latitudes 25°N and 25°S on the coasts of Africa (including Malagassy), Asia, and Central and South America should be regarded as infected or potentially infected with malaria. Enquiries should be made prior to departure to allow appropriate prophylaxis to be arranged and treatment drugs obtained. Before arrival in port further enquiries should be made as to the current malaria situation and prophylaxis issued to the crew if necessary.

Prevention of malaria

The risks of a attack of malaria can be very greatly reduced if proper precautions are taken and the disease can be cured if proper treatment is given. Despite this, cases have occurred in ships where several members of the crew have been attacked by malaria during a single voyage with severe and even fatal results.

The precautions are:

- avoidance of mosquito bites
- prevention of infection

Avoidance of mosquito bites

The best way to prevent malarial infection is to take measures to avoid being bitten. The advent of air conditioned ships has made many traditional preventive measures obsolete. However, when within two miles of a malarial shore it remains important that:

- doors are kept closed at all times after dusk;
- any mosquitoes which enter compartments are killed using insecticide spray;
- persons going on deck or ashore after dusk wear long sleeved shirts and trousers to avoid exposing their arms and legs;
- no pools of stagnant water are allowed to develop on deck or in life boats, where mosquitoes might breed.

In ships which are not air conditioned other traditional measures to protect against mosquitoes should be implemented. These include:

- placing fine wire mesh over portholes, sky lights, ventilators and other openings;
- screening lights to avoid attracting mosquitoes;
- fixing mosquito nets over beds where accommodation spaces cannot be made mosquito proof.

Prevention of infection

The fewer the bites, the smaller is the risk of infection but even when the greatest care is exercised it will seldom be possible entirely to prevent mosquito bites either on shore or in the

ship. For this reason in all cases when a ship is bound for a malarial port, Masters (in addition to taking all possible measures to prevent mosquito bites) should control infection by giving treatment systematically to all the ship's crew.

Preventive treatment (prophylaxis) does not always prevent a person from contracting malarial infection, but it will reduce the chance of disease.

All persons, therefore, should be warned that they have been exposed to the chance of malaria infection and that, if they fall ill at a later date, they should inform their doctor without delay that the fever from which they are then suffering may be due to malaria contracted abroad.

The most appropriate prophylaxis will vary with the location as there are different types of malaria in various parts of the world. There is also increasing resistance to anti-malarials which will affect their effectiveness. Up to date information should be obtained before departure if possible or from the local health authorities.

General guidelines

Start taking the prophylaxis before arrival at a malarial area in accordance with specific instructions and depending on the region. (Usually 1-3 weeks before departure). This will allow the tolerance and side-effects (if any) of the prophylactic drug to be assessed. Prophylaxis should be continued for 4 weeks after leaving the malarial area so as to ensure all stages of the parasite have been killed.

No drugs for the treatment of malaria are specified in the MSN 1726 as the advice varies with destination and the pattern of disease in any given malarial area at the time.

For information on the UK's preferred guidelines, recommend 3 different regimes depending on destination:

- Proguanil 200 mg once daily and chloroquine 300 mg weekly
 - Mefloquine 250 mg once weekly
 - Malarprim (combined tablet of doxycycline and pyrimethamine) 1 tablet weekly and chloroquine 300 mg weekly
- The first two may be used in areas of high level resistance.

Treatment of malaria

Features of the illness

Malaria cannot be diagnosed with certainty without laboratory assistance. If the person has been in a potentially malarial area within the last few months and has a fever they should be assumed to have malaria. The characteristic patterns of fever associated with malaria (fever every 2 to 3 days) may not be obvious. The illness may progress rapidly without many features other than fever and sweating. There will often be a severe headache. If there is any doubt about whether to treat or not get **RADIO MEDICAL ADVICE**.

General treatment for mild or severe malaria

The patient should be put to bed in a cool place and his temperature, pulse and respiration taken four hourly. If body temperature rises to 40°C or over, cooling should be carried out. The temperature should be taken and recorded at 15 minute intervals until it has been normal for some time. Thereafter the four-hourly recording should be resumed until the attack has definitely passed.

Specific treatment for mild or severe malaria

Anti-malarial drugs are not specified in MSN 1726 as treatment depends on the area and patterns of resistance. If anti-malarials are to be carried seek appropriate advice on which to obtain/use.

The following examples of current regimes are given for information:

- Quinine 600 mg every 8 hours for 7 days followed by Fansidar (see below) 3 tablets as a single dose
- or
- Mefloquine 500 mg (2 tablets) for 2 doses 8 hours apart

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Chloroquine is not used for treatment except for proven single infections with vivax and other benign malarias because of drug resistance. If quinine, Fansidar or mefloquine are not available then chloroquine 300 mg 8 hourly for three doses then 300 mg daily for 2 days should be used.

If the patient is unable to take medicine by mouth or is vomiting then quinine 600 mg should be given by intramuscular injection every 8 hours. As soon as the patient is able to swallow it should be given by mouth. Quinine may produce ringing in the ears or dizziness, but this should not normally be a reason to stop treatment.

NOTE: All patients who have been treated for malaria or suspected malaria must see a doctor at the next port because further medical treatment may be necessary.

Measles

French: *Rougeole* German: *Masern* Italian: *Morbillo* Spanish: *Sarampion*

Incubation Period: 7 to 18 days usually 10 until onset of fever, 14 days until rash

Period of communicability: about 10 days, minimally infectious after the second day of the rash

Isolation Period: 4 days after onset of rash

Quarantine Period: None

Measles does not often occur in adults. See also the sections on German measles and scarlet fever and the table of differences of symptoms.

The disease starts like a cold in the nose, with sneezing, running nose and eyes, headache, cough and a slight fever (37.5°C–39°C). During the next two days the catarrh extends to the throat causing hoarseness and a cough. A careful examination of the mouth during this period may reveal minute white or bluish white spots the size of a pin's head on the inner side of the cheeks, or the tongue and inner side of the lips. These are known as 'Koplik spots' and are not found in German measles and scarlet fever.

The rash appears on the fourth day when the temperature increases to 38–40°C. Pale rose-coloured spots first appear on the face and spread down to cover the rest of the body. The spots run together to form a mottled blotchy appearance. The rash deepens in colour as the patient grows older. In four or five days the rash begins to fade, starting where it first appeared. The skin may peel.

The main danger of measles is that the patient may get bronchitis, pneumonia or middle ear infection.

General treatment

This highly infectious disease is conveyed to others when the patient coughs or sneezes.

There is no specific treatment, but the patient may have paracetamol. Calamine lotion, if available, may be applied to soothe the rash.

Meningococcal disease (meningitis and septicaemia)

French: *Méningite cérébro-spinale épidémique*

German: *Epidemische Meningitis Cerebro-spinal*

Italian: *Meningite cerebro-spinale epidemica*

Spanish: *Meningitis cerebro-spinal epidemica*

Incubation Period: 2 to 10 days, usually 3 to 4

Period of communicability: Generally not communicable whilst the patient is on antibiotics

Isolation Period: For 24 hours after the start of antibiotics

Quarantine Period: None

Infection caused by the meningococcus (a bacterium) can cause either meningitis, with inflammation of the membranes surrounding the brain and spinal cord, or a septicaemia characterised by a generalised rash that does not fade on pressure. Unless treated promptly and effectively, the outcome is nearly always fatal. It occurs in epidemics which may affect closed communities such as a ship. The infection enters by the nose and mouth.

Meningitis starts suddenly with fever, considerable headache and vomiting. Within the first day the temperature increases rapidly to 39°C or more and the headache becomes agonising.

Vomiting increases and there is general backache with pain and stiffness in the neck. Intolerance of light (photophobia) is usually present. The patient may be intensely irritable and resent all interference, or may even be delirious.

As the meningitis develops the patient adopts a characteristic posture in bed, lying on the side with his back to the light, knees drawn up and neck bent backwards. Unconsciousness with incontinence may develop.

The septicaemia caused by the meningococcus also starts suddenly with a flu like illness. A rash develops quickly, starting with pin prick like spots which will not blanch when pressed. This rash may progress to form large dark red areas.

Individual cases may vary in the speed of onset, the severity of the illness and the clinical features which are present.

If meningitis is suspected get **RADIO MEDICAL ADVICE** and it will help the doctor if the results of the two following tests are available:

The neck bending test

Ask the patient to attempt to put his chin on his chest. In meningitis the patient will be unable to do so because forward neck movement will be greatly restricted by muscle contraction. Try to increase the range of forward movement by pushing gently on the back of his head. The neck muscles will contract even more to prevent the movement and the headache and backache will be increased.

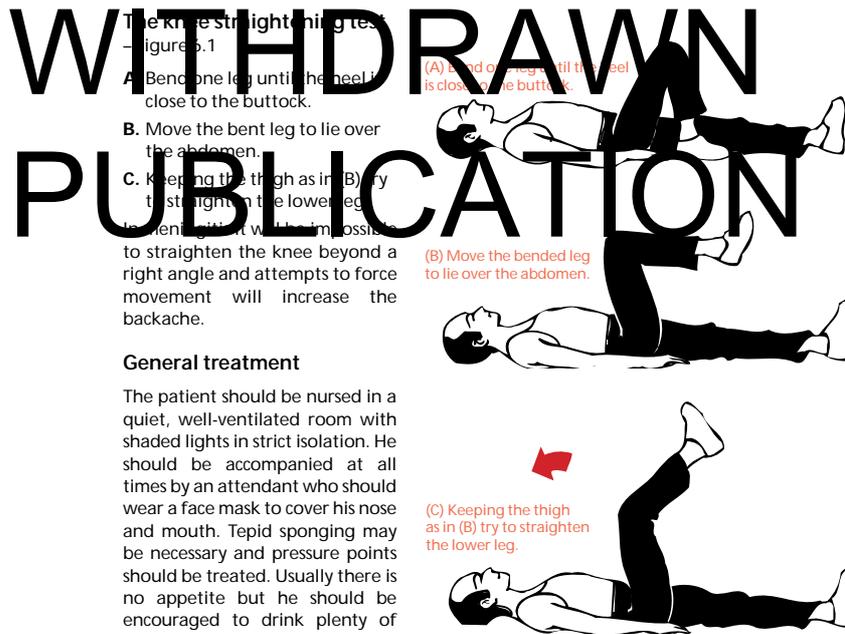


Figure 6.1 The knee straightening test.

General treatment

The patient should be nursed in a quiet, well-ventilated room with shaded lights in strict isolation. He should be accompanied at all times by an attendant who should wear a face mask to cover his nose and mouth. Tepid sponging may be necessary and pressure points should be treated. Usually there is no appetite but he should be encouraged to drink plenty of fluid. Ice packs may help to relieve the headache.

Specific treatment

Give benzyl penicillin 3 g intramuscularly at once, and get **RADIO MEDICAL ADVICE** as to the amount and frequency of subsequent injections of benzyl penicillin. Until such advice is received, give benzyl penicillin 2.4 g at six hourly intervals.

The headache should be treated with codeine. The patient should come under the care of a doctor as soon as possible.

Mumps

French: *Oreillons*
Italian: *Malaria Orecchioni*

German: *Mumps – Ziegenpeter*
Spanish: *Orejones*

Incubation Period: 12 to 26 days, usually 18

Period of communicability: 7 days before glandular swelling and up to 9 days after

Isolation Period: 9 days after swelling started

Quarantine Period: None

Mumps is a viral disease which causes the swelling of the salivary glands in front of the ears and around the angle of the jaw. The swelling usually affects both sides of the face though it may only affect one side and it may make the mouth difficult to open. The onset is usually sudden and may be accompanied by a slight fever. The swelling gradually diminishes and should disappear entirely in about 3 weeks.

About 20% of men with mumps get orchitis which is the swelling of one or both testicles; when this occurs it usually happens around the tenth day. Whilst very painful, orchitis does not usually result in infertility and never in impotence.

General treatment

The patient should be put in standard isolation for 9 days and stay in bed for 4 to 5 days or until the fever is no longer present. He can be given paracetamol to relieve the symptoms but there is no specific treatment.

If he develops swollen painful testicles (orchitis) he should stay in bed. He should support the scrotum on a pad or small pillow. The testicles should also be supported if the patient gets up for any reason.

Plague

French: *Peste* German: *Pest* Italian: *Peste* Spanish: *Peste*

Incubation Period: 2 to 6 days

Period of communicability: As long as infected fleas are present. Person to person spread is uncommon except with plague pneumonia.

Isolation Period: For 3 days after the start of antibiotic treatment

Quarantine Period: 6 days

Plague is a serious bacterial disease transmitted to man by infected rat fleas. It may present in three ways

Bubonic in which buboes (swollen lymph nodes) are the most obvious feature. The nodes are painful and may ooze pus.

Pneumonic in which pneumonia is the main feature. The type of plague is very infectious as the sputum contains the plague bacterium.

Septicaemic which is rapidly fatal.

The attack begins suddenly with severe malaise, shivering, pains in the back and sometimes vomiting. The patient becomes prostrated and is confused. His temperature reaches about 38°C and the pulse is rapid. After about 2 days the buboes may develop, most commonly in the groins. The buboes may soften into abscesses.

General treatment

The patient should be cared for by an attendant who should wear a face mask to cover his nose and mouth. The patient should be isolated and taken as soon as possible to a port where he can be treated. He should rest in bed, be encouraged to drink as much fluid as possible and have a very light diet. If the abscesses burst they should be dressed with a simple dressing, but they must not be lanced. Soiled linen and bed clothes should be boiled for 10 minutes or destroyed.

Specific treatment

Give Doxycycline 100 mg once daily for at least 5 days. The patient should remain on complete bed rest during convalescence.

Prevention

Plague should be notified to the local health authorities at the next port of call. The quarters of the patient and the crew should be treated with insecticide powder and dust to ensure the destruction of fleas.

Warning

Dead rats should be picked up with tongs, placed in a plastic bag, which should be sealed with string, weighted and thrown overboard; if the ship is in port, the dead rats should be disposed of in the manner required by the port medical health authority.

Poliomyelitis – infantile paralysis

French: *Poliomyélite*

German: *Poliomyelitis*

Italian: *Poliomielite*

Spanish: *Poliomiellitis*

Incubation Period: 3–21 days, commonly 7–14 days

Period of communicability: Case and most infectious during the first few days before and after the onset of symptoms

Isolation Period: Not more than 7 days

Quarantine Period: None

Poliomyelitis is an acute viral disease that occurs most often in children. It is a disease almost entirely preventable by immunisation.

The severity ranges from non-apparent infection to non-specific febrile illness, meningitis, paralytic disease and death. Symptoms of the mild disease include fever, malaise, headache, nausea and vomiting. If the disease progresses, severe muscle pain and stiffness of the neck and back, with or without paralysis will occur. The most commonly affected parts are the legs and arms, shoulders, diaphragm and chest muscles. The development of paralysis is generally complete within two days and then recovery begins. The recovery may be complete or leave some degree of paralysis.

Affected muscles are usually painful and tender if touched. They are always limp and movements of the affected parts are either weakened or lost by the wasting which appears very soon after paralysis.

Paralysis of the respiratory muscles may cause breathlessness and blueness of the lips.

General treatment

There is no specific treatment but much can be achieved by good nursing. The patient should have complete rest in bed. Pain should be treated with paracetamol and/or codeine.

If a limb has been affected it should be supported by pillows in such a way that the paralysed muscles cannot be stretched. The joints above and below the paralysis should be put through a full range of movement morning and evening to prevent stiffness.

In all cases, as soon as paralysis appears, **RADIO MEDICAL ADVICE** must be sought. If the respiratory muscles are affected, breathing difficulty may ensue. Urgent steps must be taken to get the patient to skilled hospital treatment as soon as possible.

Rabies – hydrophobia

French: *La rage* German: *Tollwut* Italian: *Rabbia* Spanish: *Rabia*

Incubation Period: in humans the incubation period is usually 2 to 12 weeks, shortest for patients bitten about the head and those with extensive bites

Communicability: Rabies is rarely, if ever, spread from human to human. Nevertheless for the duration of the illness contamination with saliva should be avoided by wearing gloves when nursing the patient

Isolation Period: Duration of the illness

Quarantine Period:

Rabies is an acute infectious viral disease that is almost always fatal. When a rabid mammal bites humans or other animals, its saliva transmits the infection into the wound, from where it spreads to the central nervous system. Rabies is primarily an infection of wild animals such as skunks, coyotes, foxes, wolves, racoons, bats, squirrels, rabbits, and chipmunks. The most common domestic animals reported to have rabies are dogs, cats, cattle, horses, mules, sheep, goats, and swine. It is possible for rabies to be transmitted if infective saliva enters a scratch or fresh break in the skin.

The development of the disease in a bitten person can be prevented by immediate and proper treatment. Once symptoms of rabies develop, death is virtually certain to result. Thus prevention of this disease is of the utmost importance.

Local port authorities should be informed of possible rabid animals so that appropriate public health measures can be instituted.

Treatment

As soon as an individual aboard ship is known to have been bitten by a dog or other possibly rabid animal, **RADIO MEDICAL ADVICE** should be obtained at once. Usually suspected cases are sent ashore to obtain the expert treatment and nursing care needed to prevent the disease.

Immediate local care should be given. Vigorous treatment to remove rabies virus from the bites or other exposures to the animal's saliva may be as important as specific anti-rabies treatment. Free bleeding from the wound should be encouraged. Other local care should consist of:

- thorough irrigation of the wounds with soap or detergent water solution;
- cleansing with antiseptic solution;
- if recommended by radio, giving an antibiotic to prevent infection;
- administering adsorbed tetanus toxoid, if indicated.
- Suturing of bite wounds should be avoided.

Prevention

When abroad, seamen should keep away from warm-blooded animals especially cats, dogs, and other carnivores. It is strongly advised that pets should not be carried on board ship as these may become infected unnoticed, through contact with rabid animals in ports.

Scarlet fever

French: *Scarlatine* German: *Scharlach* Italian: *Scarlattina* Spanish: *Escarlatina*

Incubation Period: 1 to 3 days

Period of communicability: 3 days

Isolation Period: 14 days in untreated cases, 1 to 2 days if given antibiotics.

Quarantine Period: None

Scarlet fever is not often contracted by adults. It has features similar to those of measles and German measles; see the table of differences of symptoms.

The onset is generally sudden and the temperature may rapidly rise to 39.5 to 40°C on the first day. With the fever the other main early symptom is a sore throat, which in most cases is very severe. The skin is hot and burning to the touch. The rash appears on the second day and consists of tiny bright red spots so close together that the skin assumes a scarlet or boiled lobster-like colour. It usually appears first on the neck, very rapidly spreads to the upper part of the chest and then to the rest of the body. There may be an area around the mouth which is clear of the rash. The tongue at first is covered with white fur and, when this goes, it becomes a very bright red (strawberry). The high fever usually lasts about a week. As the rash fades the skin peels in circular patches.

The danger of scarlet fever arises from the complications associated with it, e.g. inflammation of the kidneys (test the urine for protein once a day), inflammation of the ear due to the spread of infection from the throat, rheumatism and heart disease. These complications can be avoided by careful treatment.

General treatment

The patient must stay in bed and be kept as quiet as possible. The patient can be given paracetamol to relieve the pain in the throat which may also be helped if he takes plenty of cold drinks. He can take such food as he wishes.

Specific treatment

As scarlet fever usually follows from a sore throat or tonsillitis you may already be giving him the relevant treatment. Otherwise give the specific treatment for tonsillitis.

Tetanus – lockjaw

French: *Tetanos* German: *Wundstarrkrampf* Italian: *Tetano* Spanish: *Tetanos*

Incubation Period: 4 to 21 days

Period of communicability: No person to person transmission

Isolation Period: None

Quarantine Period: None

Tetanus is caused by the infection of a wound by the tetanus bacterium which secretes a powerful poison (toxin). This bacterium is very widespread in nature and the source of the wound infection may not always be easy to trace. Puncture wounds are particularly liable to be dangerous and overlooked as a point of entry. In the UK immunisation against the disease usually begins in childhood but it is necessary to have further periodic inoculations to maintain effective immunity. Fortunately the disease is a very rare condition on board ship.

The first signs of the disease may be spasms or stiffening of the jaw muscles and, sometimes, other muscles of the face leading to difficulty in opening the mouth and swallowing. The spasms tend to become more frequent and spread to the neck and back causing the patient's body to become arched. The patient remains fully conscious during the spasms which are extremely painful and brought on by external stimulus such as touch, noise or bright light. The patient is progressively exhausted until heart and lung failure prove fatal. Alternatively, the contractions may become less frequent and the patient recovers, but there is a high mortality.

Treatment

The patient should be isolated in a darkened room as far as possible from all disturbances. Get **RADIO MEDICAL ADVICE**. Give antibiotic treatment and give diazepam or chlorpromazine as sedation and to control spasms. The patient must be got to hospital as soon as possible.

Tuberculosis – TB, consumption

French: Tuberculose German: Tuberkulose Italian: Tuberculosis Spanish: Tuberculosis

Incubation Period: 4 to 12 weeks

Period of communicability: indefinite, 2 weeks after antibiotics

Isolation Period: depends on the degree of infection, rarely necessary

Quarantine Period: None

This infectious disease is caused by the tubercle bacillus. Although the lung (pulmonary) disease is the most common, TB bacteria may attack other tissues in the body: bones, joints, glands, or kidneys. Unlike most contagious diseases, tuberculosis usually takes a considerable time to develop, often appearing only after repeated, close, and prolonged exposures to a patient with the active disease. A healthy body is usually able to control the tubercle bacilli unless the invasion is overwhelming or resistance is low because of chronic alcoholism, poor nutrition, or some other weakening condition.

The pulmonary form of the disease is spread most often by coughing and sneezing.

A person may have tuberculosis for a long time before it is detected. Symptoms may consist of nothing more than a persistent cough, slight loss of weight, night sweats, and a continual 'all-in' or 'tired-out' feeling that persists when there is no good reason for it. More definitive signs pointing to tuberculosis are a cough that persists for more than a month, raising sputum with each cough, persistent or recurring pains in the chest, and afternoon rises in temperature.

When he reaches a convenient port, a seaman with one or more of these warning signs should see a physician.

Treatment

Every effort should be made to prevent anyone who has active tuberculosis from going to sea, since this would present a risk to the crew's health as well as the individual's.

The treatment of tuberculosis by medication will not usually be started at sea, since the disease does not constitute an emergency.

To prevent the spread of tuberculosis, every patient with a cough, irrespective of its cause, should hold disposable tissues over his mouth and nose when coughing or sneezing and place the used tissues in a paper bag, which should be disposed of by burning.

The medical attendant should follow good nursing isolation techniques (see Isolation Chapter 3). No special precautions are necessary for handling the patient's bedclothes, eating utensils, and personal clothing.

Tuberculosis control

A tuberculosis control programme has three objectives: (1) to keep individuals with the disease from signing on as crew-members; (2) to locate those who may have developed the disease while aboard ship and initiate treatment; and (3) to give preventive treatment to persons at high risk of developing the active disease. The first objective can be achieved by periodic, thorough physical examinations including chest X-rays and bacteriological examination of sputum.

To identify those who might have developed active tuberculosis, a chest X-ray should be taken and a medical evaluation including bacteriological examination of sputum requested when in port, if a crew-member develops symptoms of a chest cold that persist for more than two weeks.

Also, when any active disease is discovered, survey should be made of close associates of the patient and others in prolonged contact with him. Such persons are regarded as contacts and are considered at risk from the disease; they should be given a tuberculin test and chest X-ray when next in port. If they develop symptoms, full medical examination, including bacteriological examination of sputum, should be requested.

Typhus fever

French: *Typhus exanthématique*
Italian: *Tifo petecchiale*

German: *Flecktyphus*
Spanish: *Tifus petequial*

Incubation Period: 6 to 15 days, usually 12

Period of communicability: Not directly transmissible from person to person

Isolation Period: not required after de-lousing

Quarantine Period: 14 days

This disease should not be confused with typhoid fever. Typhus is caused by a small bacterium. The disease is conveyed by lice, fleas, ticks and mites. Treatment for the various types of typhus is the same and the symptoms are very similar. The main typhi are epidemic (from lice) and murine, or ship typhus, (from rat fleas).

Symptoms and signs

Onset is sudden with headache, vomiting, shivering and nausea. The temperature rapidly rises and may reach 40.0°C to 40.6°C. The patient suffers great prostration, and may be delirious or confused.

About the fifth day a rash appears on the front of the body, spreading to the back and limbs in the form of dusky red spots which give the skin a blotchy appearance. The disease if untreated persists about two weeks. With the louse-borne typhus there is usually a punched out black ulcer (eschar) which corresponds to the site of attachment.

Treatment

In the case of louse-borne typhus isolate the patient at once. Bedding and clothing of the patient and close contacts should be treated with a residual insecticide.

The patient should receive doxycycline until his temperature settles plus one day. The response is normally prompt.

whooping cough – pertussis

French: *Coqueluche* German: *Keuchhusten* Italian: *Pertosse* Spanish: *Tos Ferina*

Incubation Period: 7 to 10 days, rarely exceeding 14 days

Period of communicability: 21 days, normally no more than 5 days after antibiotics

Isolation Period: 5 days after antibiotics

Quarantine Period: None

This disease occurs among unvaccinated children; unvaccinated adults may contract it. The disease in adults has no typical features.

Symptoms and signs

The onset occurs as a severe cough which after about 7 to 10 days is marked by a typical 'whoop', with or without vomiting. The whoop is caused by a convulsive series of coughs reaching a point where the patient must take a breath. It is this noisy indrawing of breath which produces the 'whoop'. The coughing bouts may be very distressing.

Treatment

Give erythromycin for 5 days. This is unlikely to affect the course of the disease unless given very early, but it will reduce the infectiousness of the patient.

In children, during the bouts of coughing, feeding may induce vomiting. It is best, therefore, to give light food in between the coughing bout and to keep the child quiet in bed.

Yellow fever

French: *Fièvre jaune* German: *Gelbfieber* Italian: *Febbra gialla* Spanish: *Fiebra amarilla*

Incubation Period: 3 to 6 days

Period of communicability: 6 days

Isolation Period: 12 days only if *Stegomyia* mosquitoes are present in the port or on board

Quarantine Period: 6 days

This is a serious and often fatal disease which is caused by a virus transmitted to humans by a mosquito. The disease is endemic in Africa from coast to coast between the south of the Sahara and Kenya, and in parts of the Central and Southern Americas.

Prevention

Travellers to these areas should be inoculated against the disease. Many countries require a valid International Certificate of yellow fever inoculation for those who are going to, or have been in or passed through, such areas. See also the note on prevention of mosquito bites in the section dealing with malaria.

Features of the disease

The severity of the disease differs between patients. In general, from 3 to 6 days after being bitten the patient fluctuates between being chilly and being over-hot. The man has a fever as high as 41°C, headache, backache and severe nausea and vomiting from the pit of the stomach. He may seem to get slightly better but then, usually about the fourth day, he becomes very weak and produces vomit tinged with bile and blood (the so-called 'black vomit'). The stomach pains increase and the bowels are constipated. The faeces, if any, are coloured black by digested blood. The eyes become yellow (jaundice) and the mind may wander. After the fifth or sixth day the symptoms may subside and the temperature may fall; the pulse can drop from about 120 per minute to 40 or 50. This period is critical leading to recovery or death. Increasing jaundice and very scanty, or lack of, urine are unfavourable signs. Protein in the urine occurs soon after the start of the illness. Some patients should be tested for it.

General treatment

The patient must go to bed and stay in a room free from mosquitoes.

The patient must be encouraged to drink as much as possible, fruit juices are recommended.

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