

Introduction

This section of the Guide is concerned with the care and treatment of bed patients until they recover or are sent to hospital for professional attention.

Good nursing is vital to the ease and speed of recovery from any condition. Attention to detail and comfort may make the lot of the sick or injured person much more tolerable. Cheerful, helpful and intelligent nursing can greatly influence the person's attitude in a positive direction towards his illness or injury.

The nurses

A sick person needs to have confidence in his attendants who should understand his requirements. A nurse should be selected with care and the master or a senior officer should check on the performance of the person chosen.

Sick quarters

Wherever possible a patient sufficiently ill to require nursing should be in the ship's hospital or in a cabin away from others. In this way the patient will benefit from quietness and the risk of spreading any unknown infection will be minimised. The sick quarters should be comfortable and easily cleaned. The room fittings and floors should be cleaned daily.

Adequate ventilation of the sick quarters is of great importance and it is equally important that changes of temperature should be avoided. The ideal temperature for the sick room is between 15.5°C and 18.5°C. If possible, direct sunlight should be admitted to the cabin. If the weather is warm and the portholes will open they should be left open.

Arrival of the patient

It may be necessary to assist the patient to undress and get into bed. A patient with a reduced level of consciousness will have to be undressed. Take off boots or shoes first, then socks, trousers, jacket and shirt in that order.

In the case of severe leg injuries, you may have to remove the trousers by cutting down the seams. In the case of arm injuries, remove the arm from the shirt sleeve on the sound side first, then slip the shirt over the head and lastly withdraw the arm carefully from the sleeve on the injured side.

In cold climates the patient should always wear suitable night wear. In the tropics cotton nightwear is preferable.

Blankets are unnecessary in the tropics but the patient should have some covering, a sheet spread over him.

If your patient has a chest condition accompanied by cough and spitting he should be provided with a receptacle, either a sputum pot or an improvised jar or tin. The receptacle provided should be fitted with a cover. If the sputum pot is not of the disposable variety add a little disinfectant. It should be thoroughly cleaned out twice daily with boiling water and a disinfectant.

Introduction
 The nurses
 Sick quarters
 Arrival of the patient
 Visitors
 Check list
 Body temperature
 Pulse rate
 Respiration rate
 Bed baths
 Mouth care
 Feeding patients in bed
 The bed
 Bed sores
 Incontinence
 Bodily functions of bed patients
 Bowel movement
 Examination of faeces
 Testing the urine
 Examination of vomited matter
 Examination of sputum
 Breathing difficulties
 Fluid balance
 Mental illness
 Unconsciousness (and insertion of airways)
 Injections

Your other duties may make it impossible for you to give uninterrupted attention to your patient and a urine bottle should therefore be left within reach of the patient on a chair, stool or locker, and covered with a cloth.

Food, plates, cups, knives, forks and spoons should be removed from the sick quarters immediately after a meal and in no circumstances should they be left there except in infectious cases. In such cases they should be washed up in the cabin and then be stacked neatly away and covered with a cloth.

Visitors

The patient should be protected from long and tiring visits from well-meaning shipmates. Visits to patients who are ill and running a temperature should be restricted to 15 minutes.

Check list

- Ensure that the person is comfortable in bed.
- Check temperature, pulse and respiration twice daily (morning and evening) or more often if not in the normal range (a four-hourly check is usual in any serious illness). Document observations.
- In appropriate cases test a specimen of urine and document.
- Keep a written record of the illness.
- Arrange that soft drinks are easily available unless fluids are to be restricted. No alcohol.
- Specify normal diet or any dietary restrictions.
- Ensure that the person knows to ask for a bottle or a bedpan as needed – some do not unless told.
- Check and record if bowels have moved or not.
- Check fluid-in and fluid-out by asking the person questions about drinking and passing urine. In certain illnesses a fluid chart must be kept.
- Check that the person is eating.
- Re-make the bed at least twice a day or more often if required to keep the person comfortable. Look out for crumbs and creases, both of which can be uncomfortable.
- Try to avoid boredom by suitable reading and hobby material. A radio and/or TV will also help to provide interest for the patient.
- A means of summoning other people, such as a bell, telephone or intercom should be available if the person cannot call out and be heard, or if the person is not so seriously ill as to require somebody to be with him at all times.
- Ensure patient safety.

The body temperature

The body temperature, pulse rate and respiration should be recorded. You should make use of your temperature charts, or if no more charts are available, then your findings should be written down, together with the hour at which they were noted. These readings should be taken twice a day and always at the same hours, and more frequently if the patient is seriously ill.

It will rarely be necessary to record the temperature at more frequent intervals than four-hourly. The only exceptions to this rule are in cases of severe head injury, acute abdominal conditions and hyperpyrexia when more frequent temperature recordings are required.

The body temperature is measured by using a clinical thermometer, except in hypothermia when a low reading thermometer must be used. To take the temperature, first shake down the mercury in a clinical thermometer to about 35°C. Then place the thermometer in the person's mouth, under the tongue. The thermometer should remain in the mouth with the lips closed – no speaking – for at least 1 minute. After 1 minute, read the thermometer, then replace it in the patient's mouth for a further minute. Check the reading and if it reads the same, record the temperature on the chart. Repeat the process if it is different. Then disinfect the thermometer.

Sometimes it will be necessary to take the temperature per rectum, e.g. hypothermia. In that case, first lubricate the thermometer with Vaseline. Then, with the patient lying on his side, push the thermometer gently into the rectum for a distance of 5 cm and leave for 2 minutes before reading it. Do not use the same thermometer as is used in the mouth.

People who are unconscious, restless or possibly drunk should not have their mouth temperatures taken in case they chew the thermometer. These people should have their temperature taken by placing the thermometer in the armpit and holding the arm into the side for 2 minutes before the thermometer is read.

The normal body temperature is 36.9°Celsius (centigrade) and lies in the range 36.3 to 37.2°C. Temperature taken in the armpit is 1/2°C lower, and in the rectum 1/2°C higher. In good health, variations in temperature are slight.

Body temperature is raised, and fever is said to be present, in infectious conditions and in a few disorders which affect the heat regulating mechanism in the brain.

| Centigrade (Celsius) | |
|--------------------------|----------------------------|
| Fatal (as a rule) | Moderate Fever |
| 43.3 | 38.3 |
| 42.8 | 37.8 |
| 42.2 | Healthy Temperature |
| Dangerous Fever | 37.2 |
| 41.7 | 36.7 |
| 41.1 | 36.1 |
| High Fever | 35.6 |
| 40.6 | Hypothermia |
| 40.0 | 35.0 and below |
| 39.4 | |
| 38.9 | |

In feverish illnesses the body temperature rises and then falls to normal. At first the person may feel cold and shivery. Then he looks and feels hot, the skin is flushed, dry and warm and the patient becomes thirsty. He may suffer from headache and may be very restless. The temperature may still continue to rise. Finally the temperature falls and the person may sweat profusely, becoming wet through. As this happens, he may need a change of clothing and bedding.

During the cold stage, the person should have one or two warm blankets put around him to keep him warm but too many blankets may help to increase his temperature. As he reaches the hot stage, he should be given cool drinks, not alcohol.

If the temperature rises above 40°C sponging or even a cool bath may be required to prevent further rise of temperature or reduce it. In the sweating stage the clothing and bedding should be changed.

The pulse rate

The pulse rate is the number of heart beats per minute. The pulse is felt at the wrist, or the heart rate is counted by listening to the heartbeat over the nipple on the left side of the chest. The pulse rate varies with age, sex and activity. The pulse rate is increased normally by exercise and excitement; it is decreased by sleep and to a lesser extent by relaxation and some drugs. Pulse rates of 120 and above can be counted more easily by listening over the heart.

Normal resting pulse rate (number of heartbeats per minute)

| | |
|----------------|-----------|
| Age 2 to 5 | About 100 |
| Age 5 to 10 | About 90 |
| Adults, male | 65 to 80 |
| Adults, female | 75 to 85 |

The pulse rate will usually rise about 10 beats per minute for every 0.5°C over 38°C. In heart disease and shock, a high pulse rate may be found with a normal temperature.

Note and record also whether the pulse beat is regular or irregular, i.e. whether there are the same number of beats in each 15 seconds and whether the strength of each beat is about the same.

If the rhythm is very irregular, count the pulse at the wrist and also count the pulse by listening over the heart. The rates may be different because weak heartbeats will be heard, but the resulting pulse wave may not be strong enough to be felt. Count for a full minute in each case.

The respiration rate

The respiration rate will often give you a clue to the diagnosis of the case.

The rate is the number of times per minute that the patient breathes in. It is counted by watching the number of inspirations per minute. This count should be made without the patient's knowledge by continuing to hold the wrist as if taking the pulse. If the patient is conscious of what you are doing, the rate is liable to be irregular. A good plan is to take the respiration rate immediately after taking the pulse.

The respiration rate varies with age, sex and activity. It is increased normally by exercise, excitement and emotion; it is decreased by sleep and rest.

Normal resting respiration rate (number of breaths per minute)

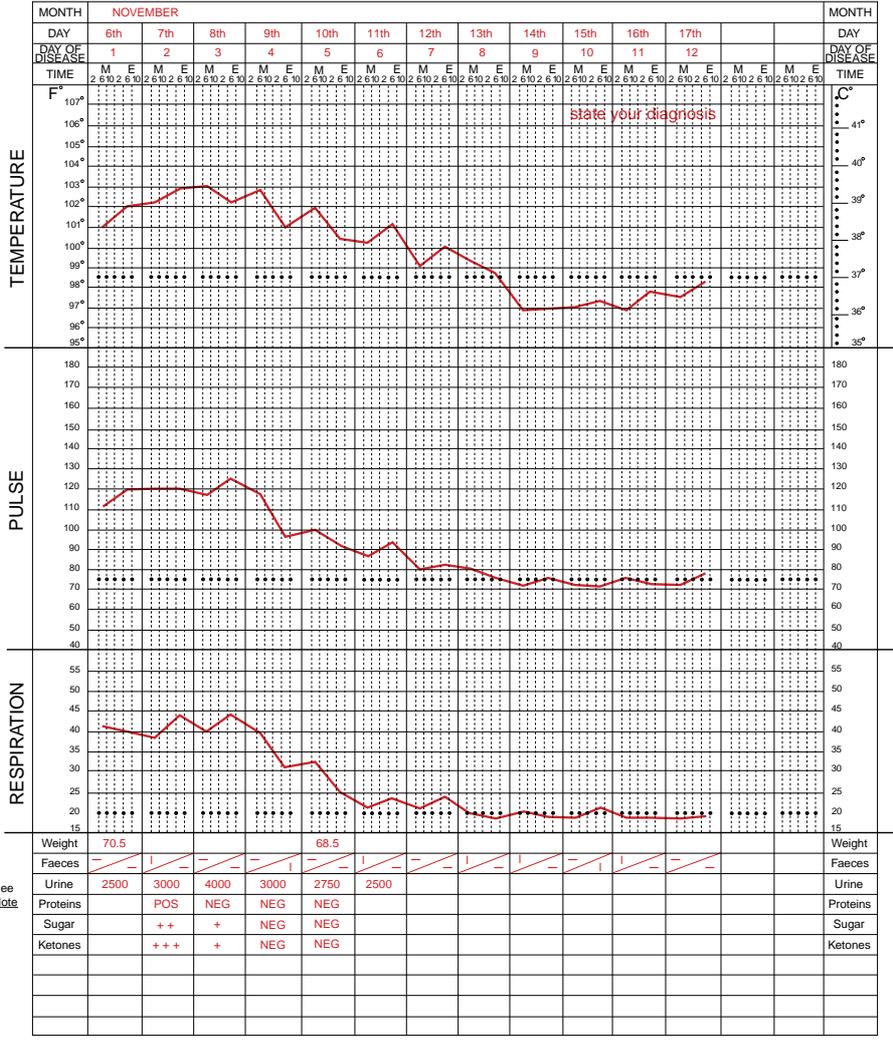
| | |
|---------------|---------|
| Age 2 to 5 | 28 – 24 |
| 5 to Adult | 24 – 18 |
| Adult, male | 18 – 16 |
| Adult, female | 20 – 18 |

Always count respirations for a full minute, noting any discomfort in breathing in or out.

The pulse rate will usually rise about 4 beats per minute for every rise of 1 respiration per minute. This 4:1 ratio will be altered in chest diseases such as pneumonia or asthma which can cause a great rise in respiration rate.

A Temperature, Pulse and Respiration Chart

Patient's Name 3rd OFFICER M.Y.X. Age 24 years CABIN



Note Weight - in kgs ; Faeces - number of movements am/pm ; Urine - amount in mls
 If urine tested record as appropriate , for Protein ; Neg or Pos (not present / present) ; &
 for Sugar and for Ketones ; Neg / + / ++ / +++
 The remaining rows can be used for other factors significant to the patient's condition

Bed baths

Patients who are confined to bed should be washed all over at least every day. If they are hot, sticky, and feverish, they should be washed at least twice a day. Wash the patient, beginning at the head. If the patient is well enough, he should wash his own face and genital area; otherwise the attendants should do this. Wash and dry one part of the body at a time so that the patient is not uncovered all at once.

When you have finished washing the patient, lightly dust pressure areas and skin creases with talc.

The bed linen should be changed as frequently as necessary, it is much easier using 2 attendants.

Mouth care

Make sure that plenty of drinks are available to prevent dryness and that facilities for brushing teeth and dentures are made available twice a day.

Very ill patients or unconscious patients should have poor fitting dentures removed. The inside of the cheeks, the gums, the teeth and the tongue should be swabbed with dilute glycerine of thymol on a cotton bud, or other suitable material. If the lips are dry, apply Vaseline/petroleum jelly thinly to these areas. This procedure should be repeated as often as is necessary to keep the areas moist.

Feeding patients in bed

People who are ill or injured may not feel much like eating. They may also have to be encouraged to drink plenty to prevent dehydration. So, always try to find out what the person would like to eat or drink and give him what he wants if you possibly can. Food should also be presented as attractively as possible on a suitable tray. Special diets, when they are prescribed, must be strictly followed. If a weak patient spills food or drink, use towels or sheeting to keep patient and bedding as clean as possible. If they have difficulty in swallowing, soft food only should be given.

The bed

The bed should be made up and the linen changed at regular intervals. Remember that creases can be most uncomfortable and can cause bedsores. If the patient is gravely ill, incontinent or likely to sweat excessively, use a waterproof sheet covered by a draw sheet across the bottom sheet.

If the patient has a fracture or finds the weight of his bedding to be uncomfortable, you can support the bedding with one or more bed cradles. These can be improvised from a topless wooden box by removing the two shorter (or longer) sides and then inverting it. The cradle goes over the affected part of the patient and the bedding rests on top of the cradle.

Patients who cannot get up can have their bed linen changed by rolling them gently to one side of the bed and untucking the used linen on the unoccupied side. It is then rolled up and placed against the patient. Clean linen is then tucked under the mattress and its outer edge rolled up and placed beside the roll of used linen. The patient can then be very gently rolled over to the clean side of the bed and the job completed. The same technique can be applied, but on an end to end basis, for patients who have to be nursed in a seated position. If the patient is told what you are doing, as you do it, he will know what to expect and will probably co-operate as far as he can. A freshened bed is a comfort to most sick people. Bed making and changing an occupied bed requires two people; it is easier if the bed can be in the centre of the cabin. (Figure 3.1).

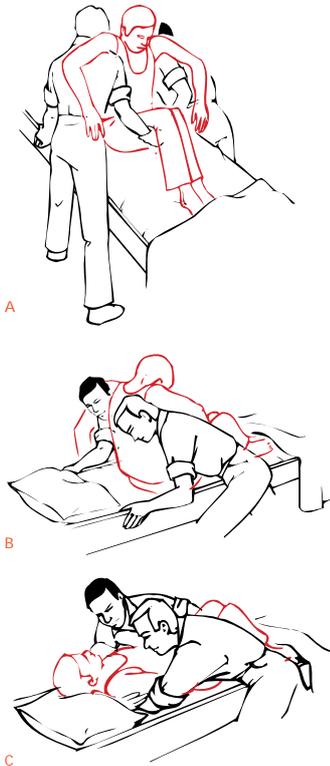


Figure 3.1 Moving a patient in bed – always use two helpers, who bend their legs not their backs.

Bed sores

Anyone in bed is constantly prone to bed sores (pressure sores) unless preventative action is taken. Unconscious patients and the incontinent are at risk of bed sores. Frequent change of posture, day and night, with, in the case of the incontinent, thorough washing and drying will be required.

Prevention of pressure sores begins by making the person comfortable in bed. Choose a good mattress, keep the sheets taut and smooth. Keep the skin clean and dry. Turning should be done by two or preferably more people. Begin by lifting the person up a little from the bed. Then roll him over slowly and gently.

Figure 3.2 shows the sites on the body where pressure sores may occur. Pillows and other padding can be used to relieve pressure as indicated in the Figure. Wash pressure areas gently and, when dry, dust lightly with talc.

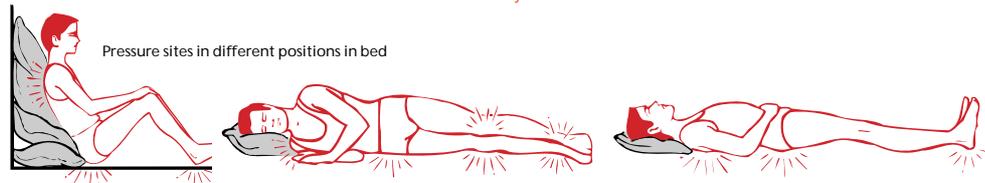
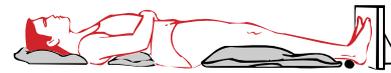


Figure 3.2 Pressure sites in bed.



Patient may be further helped by a cushion under the knee joint and one at his feet.

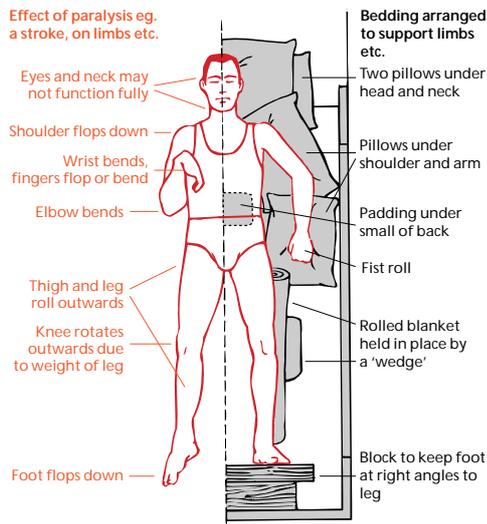


Figure 3.3 Paralyzed patient.



Figure 3.4 Paralyzed patient supported in bed (side view).

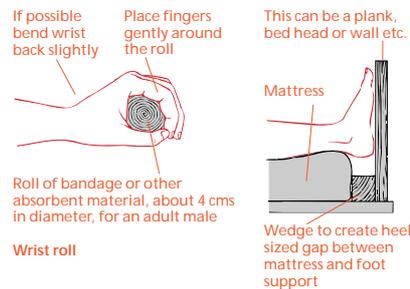


Figure 3.5 Two aides for paralyzed patients.

Incontinence

Incontinence (urinary and/or faecal) may occur with conscious or unconscious patients. It is acutely embarrassing to conscious patients and they should be re-assured. They must be kept clean. Check the patient frequently.

Collect together all the things which will be necessary to leave the patient in a clean, dry condition, i.e.:

- soap and warm water;
- toilet paper, cotton wool;
- towels;
- talcum powder;
- clean bed linen;
- a change of clothing/pyjamas;
- a plastic bag for soiled tissues;
- a plastic bag for foul linen/clothing.

Clean up with toilet paper. Then wash the soiled areas with cotton wool, soap and water. When the patient has been cleaned, dry him thoroughly by patting. Then dust lightly with talcum powder and remake the bed with clean linen.

If the patient can walk about it may help to assist him into a bath or shower for cleaning up. If a male patient is incontinent of urine place his penis in a urine bottle.

Bodily functions of bed patients

Where the condition of the patient warrants, and if the toilet or a suitable commode is available, it is always better to use these facilities. Privacy is important. The attendant should remain within hearing. Very ill patients may require support or assistance with the bed-pan. Appliances must be emptied immediately and thoroughly cleaned and disinfected. All faeces, urine, vomit, or sputum, should be inspected and a record kept of the amount, colour, consistency, and smell; in some instances it may be necessary to retain samples or to make tests.

Bowel movement in illness

This often worries people. There is no need for the bowels to move every day, nor may it be unhealthy if the bowels do not move for a week and the person feels perfectly well. In illness, food intake is often restricted and, on the basis of less in, less out, bowel motions will not be expected to follow their normal pattern and will probably become less frequent.

Examination of faeces

The bowel habits of patients vary in frequency and character so it is important to establish what is normal for each patient before drawing conclusions from an inspection of the faeces. Constipation should be avoided as this can be very uncomfortable for the patient.

Abnormalities

Common abnormalities to be looked for are blood, pus, slime (mucus), diminished bile pigment content, and worms.

Blood. Black, tarry faeces either formed or fluid but always of offensive odour, indicate bleeding from the stomach or high up in the intestines. The blood has been altered by the digestive process (known as malaena)

Bright red blood suggests an abnormal condition of the lower bowel, rectum or anus. *Haemorrhoids* (piles) are the most common cause of this type of bleeding but such cases should be referred to a doctor, when convenient, to exclude more serious causes.

Slimy faeces occur mainly in acute or chronic infections of the large bowel, but irritation of the bowel lining from any cause can also produce excess mucus.

Bile pigment. Pale, putty-coloured faeces caused by a diminished bile content are associated with some liver, pancreas or gall bladder diseases.

Thread worms look like white threads 0.5 to 1 cm in length which can often be seen wriggling about in recently passed faeces.

Round worms resemble earth worms measuring 15 to 20 cm in length and can similarly be seen in recently passed faeces.

Tape worms, the longest of the different varieties can measure 15 metres in length. The body is segmented and flat. Short lengths may break off and be passed in the faeces. The full length is seen only when passed after effective treatment which should be under medical supervision.

Effect of certain diseases

Acute bacillary dysentery. In severe cases up to thirty bowel actions in 24 hours may occur with much slime and blood in the faeces.

Amoebic dysentery. There is often a long history of passing bulky, offensive faeces streaked with blood and mucus.

Cholera. Diarrhoea is frequent and profuse. In severe cases quarts of odourless, watery fluid containing shreds of mucus, the so-called rice water motion, are passed daily.

Typhoid (Enteric). Constipation during the first week may be followed by frequent diarrhoea resembling pea soup.

Testing the urine

In certain illnesses, the urine is found to contain abnormal constituents when the appropriate tests are performed. The tests which are described in this section may help you to differentiate between one illness and another if you are in doubt about the diagnosis.

The urine should always be tested:

- if any person is ill enough to be confined to bed;
- if the symptoms are suggestive of an abdominal complaint;
- if the symptoms are suggestive of disease of the urinary system, e.g. pain on passing urine;
or
- if there is some trouble of the genital area.

All tests must be made on an uncontaminated specimen. In males, if there is any discharge from the penis or from behind the foreskin, or in females if there is a vaginal discharge, the genitalia should be washed with soap and water and dried on a paper towel or tissue before passing urine.

Urine glasses or other collecting vessels should be washed with detergent solution or with soap and water and must be rinsed at least three times in fresh water to remove all traces of detergent or of soap. False positive results to the tests will be given if these precautions are not taken.

Examine and test the urine immediately after it has been passed as false results may occur if stale urine is tested.

First examine the appearance of the urine. Hold the urine glass towards a source of light so that the light shines through it. Note the colour and whether the urine is crystal clear, slightly cloudy or definitely hazy (turbid). Note any odour present such as acetone or ammonia. A fishy smell is often found in urinary infections.

Normal urine varies from a pale straw to quite a dark yellow colour. In concentrated urine it becomes brownish in colour. Orange or 'smoky' coloured urine is usually due to blood in small amounts. Greater quantities of blood turn the urine red and cloudy and small clots may be seen. The urine may be the colour of strong tea or even slightly greenish in persons who are jaundiced. Persistent cloudiness is usually due to protein in the urine and can be found in urinary infections.

Test reagents

Simple and reliable Stick tests are available in the medical stores for urine testing – for sugar, ketones, blood and protein, either as separate sticks or a single multi-reagent stick.

The reagent is attached to the plastic stick which is dipped into the urine.

The tests should be done in the following way.

- remove a test strip from its container. Do not touch the test end with your fingers.
- replace the cap of the container at once and screw it on firmly; otherwise the remaining strips will become useless.
- dip the test end into the urine briefly and shake off any excess.
- read off any colour change in the test area by comparing it with the standard colours on the container at the specified times.
- make a note of the date, time and the result of the test in the patient's notes.

NOTE: Urine should be free from blood, sugar and protein. However in some young healthy persons, protein may be found on testing their urine when they are up and about during the day, but it should not occur in a 'first morning' specimen passed after a night in bed. Where protein is found in a young person's urine, the patient should empty his bladder before he goes to bed and a specimen should be passed immediately on rising in the morning. If there is no protein in this specimen, the presence of protein in other specimens taken during the day is of no significance. A similar condition can arise with sugar, but there is no test available on board which can differentiate this from diabetes. If sugar is present in the urine, the patient should be treated as a diabetic until proved otherwise.

Examination of vomited matter

Always inspect any vomited matter, because it may be helpful in arriving at a diagnosis. Note its colour, consistency, odour and approximate amount.

In cases of suspected poisoning, vomited matter should be put in a suitable receptacle, covered with an airtight lid. It should then be labelled and stored in a cool place to be available at any subsequent investigation.

Vomit may contain:

- Partly digested food.
- Bile causing the vomit to be yellow or yellow-green in colour.
- Blood. This may indicate the presence of a gastric ulcer or growth in the stomach, but it may also occur after severe straining from retching, as in seasickness, or as a complication of enlargement of the liver. The blood may be dark in colour, and resemble 'coffee grounds' if it has been retained in the stomach for any length of time. See also 'Note' in Section on sputum below.
- Faecal material. A watery brown fluid with the odour of faeces may be found in advanced cases of intestinal obstruction when there is a reverse flow of the intestinal contents.

Examination of sputum

The quantity and type of any sputum should be noted, and the presence of any blood in it should always be particularly recorded.

- clear and slimy sputum suggests chronic bronchitis.
- thick yellow or green colour suggests acute or chronic respiratory illness.
- rust colour is due to the presence of small quantities of blood and may occur in pneumonia.
- frothy sputum is characteristic of pulmonary oedema and can be white or pink in colour.
- frothy bright red sputum is associated with lung injury.

NOTE: Remember always in suspected cases of spitting blood (and also of vomiting blood) to inspect carefully the mouth and throat in a good light, and make the patient blow his nose. Coughing and vomiting blood are not common conditions, whereas slight bleeding from the gums and nose is, and an anxious and nervous patient may easily mislead the unwary.

Breathing difficulties

Patients who have difficulty in breathing will be most comfortable half sitting up, either lying back or leaning forward with their forearms and elbows supported on a bed-table with pillows.

Fluid balance

The body has self-regulating mechanisms to maintain a normal balance between fluid in and fluid out.

Fluid in

In a healthy individual, the average daily intake of the fluids from food and drink is about 2.5 litres. In temperate climates it is possible to manage for a short time on as little as 1 litre (just under 2 pints). In hot climates where there is a large fluid loss through sweating, an intake of 6 litres per day may be necessary.

Fluid out

Body fluid is lost through unseen perspiration, the breath, the urine and the faeces. At least 2.5 litres of fluid will be lost a day as follows, in a healthy individual.

| | Litres |
|---------------------|--------|
| Unseen perspiration | 0.5 |
| Breath | 0.4 |
| Urine | 1.5 |
| Faeces | 0.1 |
| | 2.5 |

To this figure must be added any loss through obvious sweating. This can be high in hot climates.

Measuring fluid imbalance

In any illness where fluid balance is likely to be a problem, eg. where diarrhoea and vomiting are a feature, a fluid chart recording the amount of fluid in and fluid out should be started at once as an aid to you and to the radio medical doctor. The quantity of fluid in and the fluid out should be added up separately every 12 hours and the totals compared. The information in the final column of the record should include as much detail as possible including, where relevant, the duration and the intensity of the fluid loss (e.g. very sweaty for one hour). It will normally be translatable into specific quantities only by a doctor to whom it will be useful.

A normal fluid balance can generally be assumed if the fluid out by way of urine and vomit plus 1 to 1.5 litres equals the fluid in.

Excessive loss of fluid (dehydration)

Dehydration may occur in any patient sweating profusely or suffering from diarrhoea, vomiting, blood loss or burns of areas exceeding about 10% of the body surface. Uncontrolled diabetes can also be a cause of dehydration. Diarrhoea and vomit both have a high fluid content which should be measured or assessed as to the amount and the extent to which it is liquid. Anyone who suffers from either or both will require a high fluid intake to maintain fluid balance. In illnesses where the fluid taken by mouth is vomited back it may be necessary to give fluids per rectum as it may also be for certain unconscious patients.

In these cases a fluid intake and output chart must be used. Signs of dehydration include excessive thirst, high temperature for a long time, dry skin, lack-lustre eyes, dry mouth, lips and tongue, and dark concentrated urine passed infrequently, if in small quantities. Ask a

dehydrated patient what he would like to drink and grant him any reasonable, non-alcoholic request. Cool citric fruit juices, sweetened with sugar or glucose, are nourishing.

In conditions, such as heat illnesses, when salt is lost with the sweat, and cholera where profuse diarrhoea occurs and salts are lost from the bowel, salt replacement is necessary. Give re-hydration solution or 1 level teaspoonful of common salt in $\frac{1}{2}$ litre of water, at first in small quantities, repeated frequently.

Giving fluids per rectum

To give fluids per rectum, the patient should lie down on his side with his buttocks raised on two pillows and you should pass a lubricated catheter (26 Charriere or French gauge) through the anus into the rectum for a distance of about 23 cm. The catheter can be lubricated with petroleum jelly (Vaseline). Next, tape the end of the catheter to the skin with the end in a convenient position to attach to a tube and drip set (Figure 3.4). Give 200 ml of water slowly through the tube, taking about 10 to 15 minutes to drip the water in. This amount will usually be retained. Leave the catheter in position and block its end with a spigot, or small cork, or compression clip.

Give the patient a further 200 ml of water every 4 hours. This should give a fluid intake of about 1,200 ml (1 litre) per day. It is worth trying to increase the amount given on each occasion to 250 ml and to give this every 3 to 3½ hours, particularly if the weather is warm and the patient is sweating. However, if any overflow occurs the amount given must be reduced. The rectum will not retain large amounts of fluid and fluid must be retained in order to be absorbed. Occasionally the rectum will not accept fluid readily, especially if it is loaded with faeces. Smaller quantities at more frequent intervals should be tried in these cases. Careful observation will show whether the fluid is being retained and whether or not the patient is being rehydrated. Aim to give at least 1 litre of fluid per day if possible.

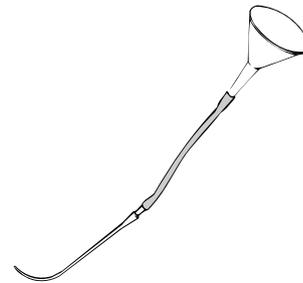


Figure 3.6 Make-shift appliance for giving fluids per rectum.

Serious mental illness

Certain guiding principles must be borne in mind when dealing with any patient who, in the opinion of the Master, is of unsound mind.

Every such case should be considered to be, actually or potentially suicidal or homicidal. All possible steps must therefore be taken to have a constant watch kept on the patient.

Should the Master deem it necessary to place the patient under supervision and/or restraint, then the patient should if possible be housed in a single-berth cabin. The cabin should be checked for safety to make sure it contains nothing that the patient might harm himself on, e.g. mirrors, stools or chairs, plastic bags or unprotected light bulbs. Supervision is necessary when water is used in the cabin.

Cutlery should only be allowed under strict supervision and it is advisable to use plastic or paper crockery. No razors, matches or weapons such as knives should be left in the patient's possession. The patient should be encouraged to drink plenty of fluids as there is a real risk of dehydration. The patient should be persuaded to undress and put on clothing that has no pockets. A search can be made for potential weapons or hidden medication. Braces, belts and cords should be removed.

A checklist of all the patient's property should be recorded for future reference, to avoid disputes.

The cabin door must be able to be firmly secured. The disturbed patient, however, may become distressed if he knows he is locked in. Care should be taken to make sure he cannot lock himself in. Any port must be firmly secured and the key removed. It is useful if there is safety glass or window or ventilator in the door, so that the patient can be observed, especially before entering the cabin. It is better for only one person to enter the cabin, but a second person should be nearby in case assistance is required.

The patient should be accompanied by two people if going out on deck. Remember the ship's side is always very near, and if the patient does go over the side the lives of others will be at risk during the rescue attempt.

Many of the patients may have delusions of persecution by their shipmates. The person caring for the patient should be calm, polite and firm, in an attempt to gain the patient's co-operation and trust. Restraint should not be used unless absolutely necessary, as this could aggravate and distress the patient even more. It is worthwhile remembering that a Paraguard or Neil Robertson stretcher can act as a useful restraint when dealing with a seriously disturbed patient.

Unconsciousness

Careful nursing of unconscious people is a demanding, difficult and very important task. The survival and eventual condition of anyone who is unconscious depends greatly on your care, skill and attention.

The 3 MUSTS for Unconscious Patients

- **MUST have a clear airway;**
- **MUST be kept in the unconscious position;**
- **MUST NEVER be left alone.**

Keeping a clear airway is essential and requires the patient to be kept in the unconscious position. A Guedel airway (Figure 3.5) can be used. Any blood, vomit or other secretions from the mouth must be mopped out or removed by the use of a sucker. Unconscious patients must never be left alone in case they move, vomit, have a fit or fall out of their bed.

Airway insertion

An airway (Figure 3.5A) should be inserted if a patient is breathing on his own but is doing so with great difficulty. The function of the airway is to ensure a clear passage between the lips and the back of the throat. Normally use size 4 for adult males, size 1 for small children, and size 3 for others.

First remove any dentures and suck or swab out any blood or vomit which is in the mouth to get a clear airway. Then, with the head fully back, slide the airway gently into the mouth with the outer curve of the airway towards the tongue. This operation will be facilitated if the airway is wetted (Figure 3.5B).

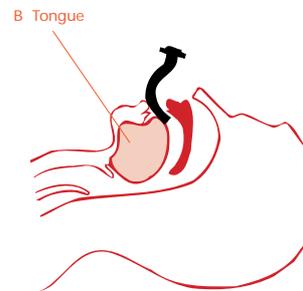
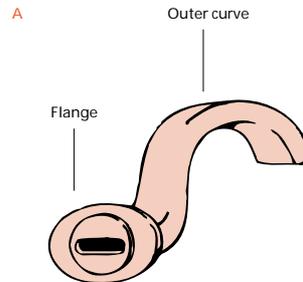
If you notice any attempt by the patient to gag, retch or vomit, it is better not to proceed with the insertion of the airway. If necessary, try again later to insert it.

Continue to slide the airway in until the flange of the airway reaches the lips. Now rotate the airway through 180° so that the outer curve is upwards to the roof of the mouth (Figure 3.5C).

Bring the jaw upwards and push the airway in until the flange at the end of the airway is outside the teeth (or gums) and inside the lips.

Check that the casualty's breath is coming through the airway. Continue to keep the jaws upwards and the head fully back so that the airway will be held in place by the teeth or gums and by its shape.

As the patient regains consciousness, he will spit out the airway; keep him in the unconscious position and under constant observation until he is fully conscious. If he relapses into unconsciousness it may be necessary to re-insert the airway if his breathing is difficult.



Head tilted fully back

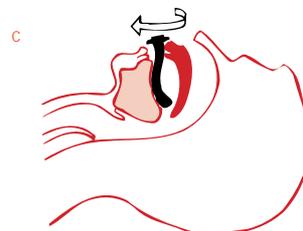


Figure 3.7 The Guedel tube airway.

Diagnosis of unconsciousness

As soon as the patient has been put to bed in the unconscious position, assess the circumstances leading to the incident of unconsciousness. Find out all you can from any witness of the occurrence and question close associates on the recent state of health of the patient.

Assess and treat any obvious cause such as a head injury. If patient is unconscious with an injury assume neck is also injured. Otherwise, undress the patient taking care to maintain a clear air passage during the process. Make a general head to toe examination of the patient.

Using the information you have collected and the results of your examination, consult the table and try to identify the cause of the unconsciousness. The following may assist in distinguishing between the main causes.

Fainting

A simple faint will rarely cause difficulty. The patient has usually recovered consciousness within several minutes and he will feel back to normal shortly without any after effects.

Brain concussion

This is usually caused by a direct blow on the head but, sometimes may be caused by a fall from a height even when there has been no direct injury. It could vary in severity from feeling dazed and shaky for a few minutes to, in very severe cases, unconsciousness lasting for hours or even days.

Brain compression

Compression should be suspected if unconsciousness comes on gradually after a head injury, or, if a casualty who has recovered consciousness after a head injury lapses again into unconsciousness.

Epilepsy

The irregular jerking movements of the limbs will have stopped before the casualty has been taken to the ship's hospital. In a single fit these jerking movements will not recur – the patient usually has a history of fits.

Stroke

The presence of paralysis of a limb or limbs on one side of the body should, in the absence of a head injury, point to this cause.

Alcohol abuse

The history obtained from witnesses or close associates will give an indication of the amount of alcohol consumed.

Although a casualty's breath may smell of alcohol, his unconsciousness may not be caused by it. He may for example have sustained a head injury in a fall when drunk.

Diabetic coma

There is usually a history of the casualty feeling unwell for two or three days before the onset of unconsciousness.

The characteristic smell of the breath is very helpful.

The general management of an unconscious patient

Make sure that an unconscious patient cannot injure himself further. Some unconscious and semi-conscious patients can be quite violent, or can move about suddenly, so ensure that they cannot fall onto the floor or hit themselves against any hard edge or surface. A bed with sides will probably be the safest place. Do not put pillows or other padding where the patient might suffocate. Remove any jewellery – rings and earrings in particular.

The person must be turned from one side to the other at least every 3 hours to prevent bedsores, this requires 2 people. Turn the patient gently and roll him smoothly from one side to the other. The head must always be kept back with a chin-up position when actually turning, and at no time must the head be allowed to bend forwards with the chin sagging. This is both to help to keep a clear airway and to prevent neck injuries. If you suspect a broken jaw or that the person has fallen from a height and may have a neck or spine injury, you should be extra specially careful during turning.

Check the breathing and that the Guedel airway is securely in place as soon as you have turned the person.

Make sure that all joints are neither fully straight nor fully bent. Ideally they should all be kept in mid-position. Place pillows under and between the bent knees and between the feet and ankles. Use a bed-cage (a large stiff box will make a good improvised cage) to keep the bedclothes from pressing on the feet and ankles. Check that elbows, wrists and fingers are in a relaxed mid-position after turning. Do not pull, strain or stretch any joint at any time. Make quite sure that the eyelids are closed and that they remain closed at all times, otherwise preventable damage to the eyeball can easily occur. Irrigate the eyes every 2 hours by opening the lids slightly and dripping some saline solution gently into the corner of each eye in such a way that the saline will run across each eye and drain from the other corner. A saline solution can be made by dissolving one level teaspoonful of salt in ½ litre of boiled water which has been allowed to cool.

After 12 hours of unconsciousness further problems will arise. Unconscious people must be given nothing by mouth in case it chokes them. However, after 12 hours of unconsciousness fluid will have to be given, particularly in hot climates and/or if the patient is obviously sweating. Because fluids cannot be given by mouth the fluid should be given per rectum. An input/output chart will be necessary and the instructions given under fluid balance should be followed. The mouth, cheeks, tongue and teeth should be moistened every 3 to 4 hours using a small swab moistened with glycerine of thymol. Carry out mouth care every time the person is turned.

After 48 hours of unconsciousness move each limb joint at least once a day providing other considerations such as fracture do not prevent this. They should be moved very gently in such a way as to put each joint through a full range of movement. Do the job systematically. Begin on the side of the patient which is most accessible. Start with the fingers and thumb, then move the wrist, the elbow and the shoulder. Now move the toes, the foot and the ankle. Then bend the knee and move the hip around. Next, turn the patient, if necessary, with the help of another person, and move the joints on the other side.

Remember that unconscious patients may be very relaxed and floppy – so do not let go of their limbs until you have placed the limb safely back on the bed. Hold the limbs firmly but not tightly and do everything slowly and with the utmost gentleness. Take your time in moving each joint fully before going on to the next.

Injections

Injections are used when rapid absorption is desired, or when the patient cannot or will not swallow a drug, or is vomiting, or the action of the medication would be destroyed by secretions of the stomach or intestine. They can be given under the skin or into a muscle. Before a patient is given an injection he should be asked whether he is allergic to it. If a patient is unconscious you will not be able to ask about allergies.

Subcutaneous (under the skin)

The site of subcutaneous injections is the fleshy part of the outer arm just below the shoulder. To make the injection, the skin should be grasped between the thumb and forefinger, and the injection is made by inserting the needle 1 cm under the skin surface (Figure 3.7). The maximum effect of the injection usually occurs in about 30 minutes.

Intramuscular (into a muscle)

Medications injected intramuscularly are absorbed more quickly than those given subcutaneously. A maximum effect is obtained in about 15 minutes.

Only two sites are recommended for intramuscular injections. These are the outer side of the middle third of the thigh and the upper outer quarter of the buttock. Great care must be taken to give the injection exactly into the correct site to avoid bone, nerves etc. (Figures 3.8 and 3.9).

If it is impossible to use either of the above sites use the deltoid muscle (upper outer third of the arm) taking care not to hit the bone (Figure 3.10).

Give the injection at right angles to the skin and insert the needle for about 3 centimetres (Figure 3.11).

If you have to give more than one injection, the others must be confined to the areas shown in the Figures but try and alternate between the four sites.

Filling a syringe

Drugs for injection are supplied in either rubber capped vials or in glass ampoules. The name and strength and expiry date of the drug is always marked on the vial. Check this carefully, using a magnifying glass if necessary. If no name is visible or it is indecipherable, that vial should be discarded.

Glass ampoules (Figure 3.14(a)) have a coloured band round the neck at which the top of the ampoule will break off cleanly – use a tissue to break. The rubber cap (Figure 3.14(b)) of the other type of vial is held on by a metal cap. A small tear-off seal may have to be removed before the rubber becomes visible. The tear-off seal should not be removed before the drug is required.

Plastic syringes are supplied either with needles attached or with the needles in separate plastic containers. These pre-sterilised syringes and needles are disposable and must be used once only.



Figure 3.8 Administering a subcutaneous injection.

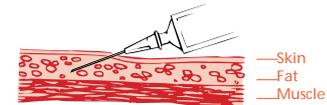


Figure 3.9 Subcutaneous injection - note the very low angle of entry.

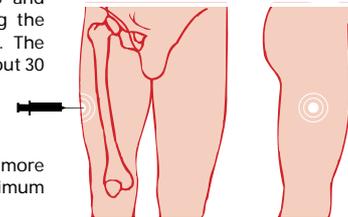


Figure 3.10 Administering an intramuscular injection into the thigh.

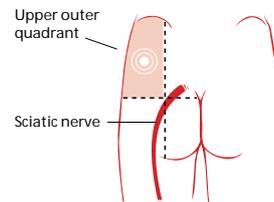


Figure 3.11 Administering an intramuscular injection into the buttock – note: injections into the sciatic nerve can have drastic consequences.



Figure 3.12 Administration of an intramuscular injection into the deltoid muscle.

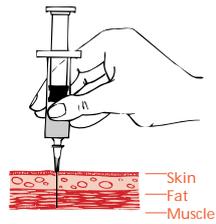


Figure 3.13 Holding the syringe for an intramuscular injection. Hold the syringe like a dart. Plunge it into a depth of 2 cms ($\frac{3}{4}$ inch).

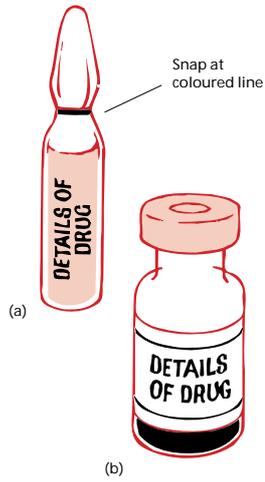


Figure 3.14 Drug vials (a) a glass ampoule, (b) a rubber-capped vial.

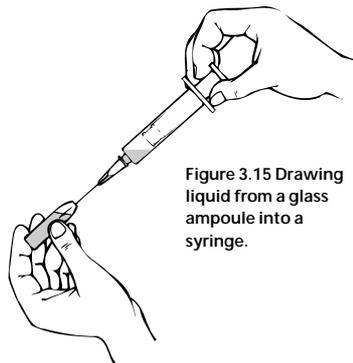


Figure 3.15 Drawing liquid from a glass ampoule into a syringe.

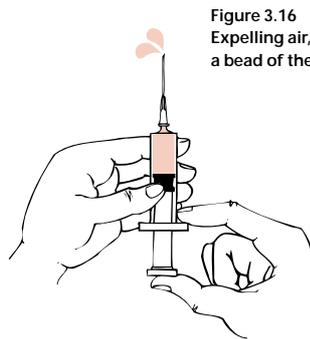


Figure 3.16 Expelling air, and a bead of the drug.

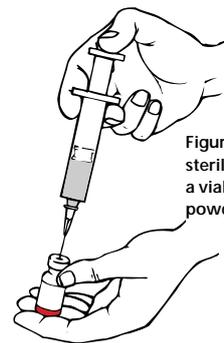


Figure 3.17 Injecting sterile water into a vial containing powdered penicillin.

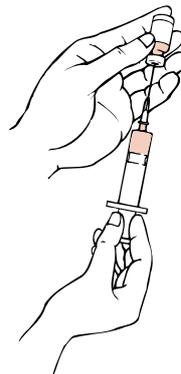


Figure 3.18 Withdrawing the dissolved penicillin from the vial.

Before giving an injection, prepare:

- The correct drug in its container, either an ampoule or a rubber capped vial.
- A disposable syringe and needle.
- Antiseptic swab.

Wash your hands thoroughly.

Take the glass ampoule and check that the name, dose and expiry date on the vial is that of the drug which you want to give. Ensure that all the liquid is in the ampoule below the neck by gently tapping the neck region with a finger.

Wrap the ampoule in a swab and gently and firmly break off the top. Make sure that you point the ampoule away from your eyes.

Set the ampoule down and open the syringe following the direction on the package. Remove the syringe and needle, leave the needle cover on until you are ready to use it. If the needle is separate, open the needle case first, leave the needle in the case. Next open the syringe packet and insert the syringe into the needle pressing it down firmly. The needle can then be removed from its sheath. Do not touch the needle shaft at any time. The ampoule is then held in one hand and the syringe and needle in the other. Slightly tilt the ampoule, insert the needle without touching the glass at the opening and draw the liquid into the barrel of the syringe by gently pulling on the plunger. Be careful that you do not push the tip of the needle on to the bottom of the ampoule. This will blunt the needle and make the injection difficult and painful (Figure 3.15).

When the ampoule is empty, withdraw the needle and point it upwards. Tap the barrel of the syringe to ensure that all air comes up to the surface of the liquid, then press the plunger gently to expel the air. A small bead of liquid will appear at the tip of the needle when this has been accomplished. If it is necessary to give less than the full dose, keep on pressing the plunger until the required volume registers on the scale on the barrel (Figure 3.16).

Penicillin in powder

To reconstitute benzylpenicillin 600 mg you will also require a 2 ml ampoule of water for injection.

Prepare a syringe as in the section above, leaving the cover on the needle.

Open an ampoule of the water and, removing the cover from the needle, draw up all the water into the syringe. Replace the cover until you have swabbed the rubber cap of the penicillin vial/bottle with antiseptic swab; then insert the needle through the rubber cap, and depress the plunger to inject the water onto the penicillin (Figure 3.17).

Withdraw the needle, replace the needle cover over it and lay the syringe and needle on the clean towel in a safe place.

Gently shake the vial so that the penicillin is dissolved in the water. Re-swab the rubber cap, allow the spirit to dry, insert the needle just through the rubber cap and invert the vial. The penicillin can now be withdrawn from the vial into the syringe. Then go through the procedure described above to get rid of the air before proceeding with the injection (Figure 3.16).

NOTES:

If you need to give only 300 mg of benzylpenicillin, reconstitute 600 mg as above and draw-up 1 ml for immediate use: the balance can be stored for up to 12 hours in the non-freezing section of a refrigerator. (1 ampoule for 1 patient)

Giving the injection

Before giving the injection cleanse the skin with antiseptic swab. Then plunge the needle into the site selected in accordance with the advice given above. Draw back the plunger and look for blood coming into the syringe from a blood vessel. Do not inject if blood comes in, but partially withdraw the needle and reinsert it at a different angle, draw back the plunger and check again for blood.

If no blood appears, give the injection slowly. Then remove the needle and massage the area gently. Safe disposal of needle and syringe is important to avoid sharps injuries to you and others. Do not re-sheath a needles which has been used to give an injection.