

## O. PERSONAL HEALTH

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### 0.1. Personal health

#### 0.1.1. Pre-deployment

##### *Health screening/check-up*

All UNDAC members should have regular health screenings/check-ups to ensure that they remain in the best of health. Such screenings enable the early detection of medical problems which can then be managed effectively. The health screenings should include:

- General medical examination, with blood and urine investigations.
- Chest X-ray and electrocardiogram (ECG/EKG).
- Breast examination and PAP (cervical smear) for females.
- Dental.
- Visual acuity.

##### *Vaccinations*

An UNDAC mission may take place in area where one is exposed to communicable diseases. The deteriorated public health conditions that accompany many of the emergencies one responds to may increase the risk of contracting an illness. Apart from personal hygiene, certain vaccinations are recommended:

- Yellow fever, for which vaccination is a requirement for entry into certain countries.
- Tetanus, in combination with diphtheria.

- Poliomyelitis.
- Hepatitis A and Hepatitis B.
- Typhoid.
- Cholera (taken before departure).
- Meningococcal meningitis.
- Other vaccinations according to the diseases endemic in the area of the world being visited, e.g., Japanese encephalitis, rabies, etc.

It is advisable that one discuss vaccination requirements with one's doctor so that the needs may be met and a schedule of vaccinations developed. It is not advisable to attempt to be vaccinated against all of these conditions at one time.

Because of the time required for full vaccination and the very short notice given for UNDAC missions, one is strongly advised to keep vaccinations updated and valid. Use of the WHO international vaccination certificate is strongly recommended as a means of recording and verifying your vaccination status.

In addition, the rise in tuberculosis (TB) world-wide should be noted. UNDAC members are advised to determine their TB status and follow their doctor's advice regarding possible vaccination, i.e., BCG.

### ***Documentation***

It is recommended that UNDAC members maintain their own health records showing important health data which may be used by health providers wherever the UNDAC member may be. Important information should include:

- Dates and results of health check-ups (including dental and visual).
- Medical illnesses and medication being used.
- Allergies, particularly to medication/drugs.
- Vaccinations.
- Individual information such as blood group.
- Health insurance details.
- Name and contact details of your usual health care provider, e.g., personal doctor or medical specialist.

Any relevant certificates or official health documents should be included. This information should be updated and carried with the UNDAC member whenever he or she is deployed. The WHO handbook entitled International Travel and Health should also be carried by all UNDAC members.

### ***Health insurance***

For peace of mind, UNDAC members should ensure that they have adequate health insurance and the necessary documentation should be carried at all times.

### ***Preventive medicine***

UNDAC members should be prepared to deploy to areas in which malaria poses a threat. Commercially available treatments, e.g., Permethrin should be applied on clothing to be used on deployments, with particular attention to outer garments and mosquito nets.

A medical kit should be prepared and checked periodically to maintain the usability of the contents. Details of this medical kit are given in 0.1.5. The booklet entitled Personal Hygiene should also be referred to by all UNDAC members.

### **0.1.2. Upon activation for UNDAC mission**

Upon activation for an UNDAC mission, members should take the following steps:

- Evaluate their state of health. If there are any doubts about existing illnesses or injuries, members should advise OCHA directly on their conditions.
- Check that their individual medical kit is prepared and packed. This should include any prescription medication or supplies being used by the member that may not be available in the deployment location.
- Pack spare health articles such as spectacles, contact lenses, dental fixtures, and the maintenance kit needed for these articles.
- Pack all necessary individual health documentation.
- Check the health threats in the deployment location, and commence prophylactic treatment, e.g., anti-malarial drugs and other preparations, e.g., extra water purification tablets.

### **0.1.3. During the UNDAC mission deployment**

#### ***Way of life***

During the first days, the newcomer unused to the conditions of life and climate is likely to have a lower resistance. Even though on most UNDAC missions there rarely is enough time for rest, it is important that one take time to sleep and relax on a regular basis. Remember that a sick member is a liability and not an asset to the team.

#### ***Diet***

This should be well balanced. Heavy meals should be avoided and alcoholic drinks either excluded or consumed in moderate quantities, only in the evenings. On the other hand enough liquid should be drunk to compensate for perspiration losses; it may be necessary to increase salt intake in the case of profuse perspiration. Amoebic dysentery and other enteric infections, often widespread in tropical regions, are transmitted by foods eaten raw or contaminated by dirty hands or unclean water. This causes acute or chronic digestive troubles which may be prevented by taking simple hygienic precautions.

Water should be the object of special care. It may transmit numerous infectious diseases when used for drinking or toilet purposes. Water of uncertain purity should be treated or boiled (boiling remains the best method). In case of difficulty drink water in the form of tea or mineral water. When a house-filter is used it is of paramount importance to boil the water after filtration. See also Section 0.2.

#### ***Body hygiene***

Water used for oral and dental hygiene should be purified or boiled beforehand; even sea water can be contaminated near river mouths and bathing in suspect water may be the cause of certain tropical infections. Without reliable information swimming should, therefore, be avoided.

### ***Protection against insects***

Certain insects and particularly certain mosquitoes in hot countries may transmit infections such as malaria. When mosquitoes are numerous in an area where malaria is endemic, all exposed areas of the skin should be treated with mosquito repellent in order to prevent bites which, besides being painful, are also dangerous; in addition, it is useful to wear clothing that covers the arms and legs in the evening.

It should be remembered that mosquito nets only provide protection under certain conditions: material sufficiently finely meshed, folded correctly during the day and the net properly closed at night so that insects cannot get in. Inside houses insects must be destroyed by spraying with an insecticide. Sprays made from products with a pyrethrum base destroy rapidly but their action is short lived.

### ***Prophylaxis against Schistosomiasis (Synonym Bilharzias)***

It is important to avoid contact with unsafe water in a zone where this infection is found. Bathing in rivers or other water sources should be strictly avoided in the absence of reliable information, as the infestation is brought about by penetration of the skin by the larval form of the parasite.

## **0.1.4. After the UNDAC mission**

### ***Medical check-up***

UNDAC members should seek medical consultation and treatment promptly if they have signs of any illness or injury following the deployment. Of particular concern is persistent fever, cough or abdominal upset with diarrhoea as these may be due to a disease contracted during the deployment. If members had any sexual contact during the deployment, they should consider being tested for venereal disease and HIV/AIDS. HIV tests may not be positive until about 3 weeks after the exposure to the virus. If signs of stress persist, UNDAC members should seek consultation with a professional mental health care provider.

### ***Documentation***

Members should update their individual health records if they develop any illness following deployment with UNDAC. They should also advise OCHA which may then alert other UNDAC members to be aware of the health threat in the deployment location or the local health authorities in the deployment site.

### ***Medication***

UNDAC members should continue to consume medication according to the regime established by the manufacturer of the medication even after they

depart the deployment location. This information may be found in the packaging of the medication and applies especially to anti-malarial drugs.

### **0.1.5. Medical kit**

#### **Contents**

Every UNDAC member should carry an individual medical kit to care for minor health illnesses or injuries. The medical kit contents should be clearly marked, including the names of the medications and their usage instructions. It is recommended that a sturdy waterproof container be used to store the medical kit contents. Organization of the contents into separate compartments for different needs will help to make use of the kit more efficient. Suggested medical contents include the following:

- Skin.
  - Sun block/sun screen.
  - Lip salve.
  - Moisturiser.
  - Powder (possibly with anti-fungal medication).
  - Waterproof plasters in assorted shapes/sizes.
  - Hydrocortisone cream against skin allergies, insect bites, etc.
  - Antiseptic cream for cuts, abrasions, etc.
  - Antiseptic soap, e.g., Dettol.
- Medication.
  - Fever, aches, pain, e.g., Paracetamol, aspirin, etc
  - Sore throat, cough, e.g., lozenges.
  - Running nose and allergies, e.g., anti-histamine, Chlorpheniramine, etc.
  - Abdominal pain, e.g., Buscopan.
  - Abdominal upset, e.g., activated charcoal, antacids.
  - Diarrhoea, e.g., Imodium.
  - Anti-malarial, e.g., mefloquine.
  - Anti-biotic, e.g., erythromycin.
  - Water purification tablets.
- Others,
  - Alcohol wipes,
  - Bandages, e.g., triangular, elastic.
  - Surgical gloves.

#### **WHO medical pack**

Each UNDAC team is issued a WHO medical pack. This contains many useful items that may be used as part of the individual medical kit. In the WHO booklet entitled "International Travel and Health" one finds description of the conditions and instructions for use of the contents.

#### **Useful references**

- Website: [www.who.ch](http://www.who.ch)
- International travel and health - vaccination requirements and health advice. WHO, Geneva, 1999.

## **0.2. Safe food for travellers**

### ***0.2.1. Safe food during deployment***

One of the two main reasons for travellers becoming ill is eating without taking into consideration some simple rules. Following the rules laid down below may, in the short term, spare the traveller a considerable amount of annoyance, while, in the long term, they can hinder serious diseases.

### ***0.2.2. Preparing before departure***

Consult your physician for advice on the various diseases, to which you may be exposed, and the need for vaccinations or other preventive measures.

Make sure your medical kit contains Oral Rehydration Salts (ORS) and water-disinfectant tablets.

### **0.2.3. Precautions taken after arrival**

#### ***Eating safely***

The following recommendations apply to all situations, from food vendors on the street to expensive hotel restaurants:

- Cooked food that has been held at room temperature for several hours constitutes one of the greatest risks of food borne illness. Make sure your food has been thoroughly cooked and is still hot when served.
- Avoid any uncooked food, apart from fruits and vegetables that can be peeled or shelled. Avoid fruits with damaged skin. Remember the dictum "Cook it, peel it or leave it".
- Ice cream from unreliable sources is frequently contaminated and may cause illness. If in doubt, avoid it.
- In some countries, certain species of fish and shellfish may contain poisonous bio- toxins even when they are well cooked. Local people can advise you about this.

#### ***What to do in case of diarrhoea***

Diarrhoea is the most common problem encountered during field missions. In order to avoid diarrhoea, ensure that hand washing and hygiene is given attention and the source of water consumed is safe. Most diarrhoeal attacks are viral in origin, are self-limiting and clear up in a few days. It is important to avoid becoming dehydrated. As soon as diarrhoea starts, drink more fluids, such as bottled, boiled or treated water, or weak tea. Fruit juice (diluted with safe water) or soup may also be taken. Dairy products should be avoided as they can

sometimes aggravate diarrhoea.

The body loses water, salts (especially sodium and potassium), water soluble vitamins and other important trace minerals in copious diarrhoea. In order to replenish some of these losses as well as restore energy, the following mix has proven successful in UNDAC missions.

- Water.
- ORS in the correct dilution.
- High dose of effervescent Vit C, i.e. 1000mg at least, provided there is no history of gastritis.
- High dose multivitamins with B-Complex, e.g., Supradyn.
- Calcium (600-100 mg. recommended).

One should try to drink as much of this mix during the course of the diarrhoea as possible. It is recommended that at least 3 litres are taken within the first 3 hours and fluids continuously consumed thereafter.

### ***General guide on amount of fluid or ORS to drink***

If diarrhoea continues for more than one day, prepare and drink the following amount of ORS solution and continue to eat normally.

- Children less than 2 years: 1/4 - 1/2 cup (50 - 100ml) after each loose stool
- 2 years to 10 years: 1/2 - 1 cup (100 - 200 ml) after each loose stool
- Older children and adults: unlimited amount

The best indicator that the fluid intake in a diarrhoeal state is sufficient is when there is adequate diuresis, i.e., good amounts of urine are produced at an average of 60 mls. per hour. Watch out for signs of severe dehydration and electrolyte (salt and water) imbalance such as poor urinary output, cramps in legs and dizziness/fainting spells.

Activated charcoal tablets, e.g., Ultracarbon, may be consumed to reduce irritation and absorb some of the possible toxins in the gastrointestinal tract. Anti-diarrhoeals, e.g., Loperamide, should not be used routinely and medical assessment is recommended in severe diarrhoea to relieve symptoms but fluid intake must be adequate. Anti-diarrhoeals should NEVER be used with children without medical advice and supervision.

### ***When is diarrhoea worrying?***

Seek medical help if there is any blood in the stools or accompanying fever and vomiting. Diarrhoea that lasts for more than 3 days also requires medical attention.

When there is no medical help available and there is blood in the stools, a 5-days course of Cotrimoxazole may be taken. Metronidazole (Flagyl) is also a useful drug to be taken over five to seven days to treat possible parasitic infection. Please DO NOT consume alcohol when on antibiotics as they may cause

complications and/or reactions.

## **0.3. Safe water for travellers**

### **0.3.1. Safe water during deployment**

Contaminated water is the second main reason for travellers becoming ill during their stay in foreign countries. Again, as in the case of food, it is vital to follow some simple rules to prevent diseases caused by unclean water.

### **0.3.2. Preparing before departure**

As with the preparations concerning food, it is important to consult your physician for advice on diseases, vaccinations, and preventive measures as well as to ensure that your medical kit contains Oral Rehydration Salts (ORS) and water-disinfection tablets. A personal water purification kit, e.g., Katadyn is also recommended.

### **0.3.3. Precautions to be taken after arrival**

When travelling - if you are at all in doubt - all water should be perceived as being contaminated. The following recommendations, therefore, apply to all solutions:

- When the safety of drinking water is doubtful, have it boiled or disinfect it with reliable, slow-release, disinfectant tablets. These are generally available in pharmacies.
- Avoid ice unless you are sure that it is made from safe water. Be aware that ice from apparently clean sources, e.g., hotel ice-automats is not always safe.
- Beverages, such as hot tea or coffee, wine, beer, and carbonated soft drinks or fruit juices which are either bottled or otherwise packaged, are usually safe to drink.
- Unpasteurized milk should be boiled before consumption.
- It is possible to buy bottled clean water in most places. It is recommended that water be purchased and used whenever possible - even for brushing teeth.

## **0.4. Stress**

### ***Introduction***

Working in emergency relief environments will expose UNDAC members to a number of situations and conditions that create stress and may lead to a stress-reaction. Situations that are found to be stressful for one individual might not be for another and the type of reaction to stress as well as successful coping strategies vary from person to person.

In a sense, the pressures in the disaster environment are helpful. They tend

to focus your attention, increase concentration, mobilize your energy, and consolidate your will to achieve. However, failure to cope effectively with stress may cause a decline in capacity, a decrease in productivity, and prove detrimental to team functioning. Therefore, it is important for both the team and the individual to acknowledge this and be prepared to deal with stress and its consequences from the very beginning of the mission, thus preventing the stress-reaction from escalating into a problem for the individual and the team.

This section will focus on two types of stress:

- **Cumulative stress** – Stress that is built up over time by the normal conditions of a disaster mission and, if not handled, gradually leading the individual to perform less effectively. Some form of stress on missions is inevitable and failure to address cumulative stress may lead to burn-out.
- **Critical incident stress** – Stress caused by experiencing one or several traumatic incidents. This type of stress may lead to mental and physical health problems that can't be dealt with at field level.

#### 0.4.1. Cumulative stress

##### *Causes of cumulative stress*

This type of stress develops in the complicated, unnatural and, often, exhausting situations of a mission. Given below is a list of possible causes of cumulative stress:

- Problems in basic needs, e.g., housing discomforts/lack of privacy, food (lack of variety/poor quality), and clean water shortages.
- Travel delays.
- Lack of safety and security/health hazards.
- Immobility, inactivity, lack of exercise.
- Problems at home/missing family and friends.
- Witnessing violence/tragedy/trauma.
- Inability to make a difference/no progress/apathy amongst responders or survivors.
- Noisy/chaotic environment.
- Malfunctioning equipment.
- No rest/relaxation periods.
- Unclear/constantly shifting tasks, unrealistic expectations (self or others).
- Media attention.
- Non-recognition of work/hostility to efforts.
- Pressure to achieve.
- Un-supportive or difficult colleagues, superiors.
- Anxiety about mission, accomplishments, responsibilities, skills.
- Lack of resources, limited control of situation.
- Cultural/language difference.
- Murphy's Law.

### ***Indicators of cumulative stress***

It is important to know - and thereby be able to recognise - indicators of cumulative stress that might occur. It is not only vital to recognise them within yourself but also if they occur in your colleagues. It is, generally, a good idea for individual team members to share with their colleagues clues that will indicate when they are not handling their stress satisfactorily.

The indicators may include some of the following:

- Narrowing of attention/impaired judgment/loss of perspective.
- Disorientation, forgetfulness.
- Impatience or verbal aggression/overly-critical.
- Anger/rage.
- Inappropriate, purposeless, or even destructive behaviour.
- Over-activity.
- Sleep disorders.
- Susceptibility to viruses/psychosomatic complaints.
- Hyper-emotions, e.g., grief, elation, wide mood swings.
- Physical tension, headaches.
- Increased substance abuse.
- Eating disorders, e.g., lack of appetite, eating too much.
- Lack of energy, interest, enthusiasm.
- Withdrawal/depression/loss of sense of humour.
- Inability to perform.
- Questioning basic beliefs/values/cynicism.

### ***Coping with cumulative stress***

Experience has shown that knowledge, especially through training, about cumulative stress, awareness of the early onset indicators, and prompt action to establish coping systems has had a positive effect on reducing cumulative stress and avoiding burnout.

It's normal to experience cumulative stress during a disaster operation and most reactions to stress are considered normal behaviours. Cumulative stress may be identified and managed.

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Following are some ways to minimize cumulative stress during a disaster operation:

- Know your limitations, manage your expectations, and accept the situation.
- Get rest, relaxation, sleep, and exercise.
- Eat regularly.
- Change tasks and roles.
- Identify and act on the source of stress.
- Take time off.
- Create personal semi-private space.

- Control substance abuse.
- Talk/laugh/cry with your colleagues.
- Practice prayer, meditation or progressive relaxation.
- Pamper yourself – shop, read, sing, dance, write, listen or play music, work on a hobby, take a sauna, cook a meal.
- Participate in a non-work related social situation.

#### **0.4.2. Critical incident stress**

##### ***Causes of critical incident stress***

Critical incident stress is caused by sudden traumatic incidents outside the range of normal experiences. These might include:

- Witnessing casualties and destruction.
- Serious injury to self or injury/death to relative, co-worker, friend.
- Events that are life threatening.
- Events that cause extreme physical or emotional loss.

##### ***Indicators of critical incident stress***

Indicators of critical incident stress may be separated into immediate and delayed reactions. The following list is not conclusive, but presents some of the most common symptoms:

- Immediate:
  - Nausea, sweating/chills.
  - Dizziness.
  - Hyperventilation.
  - Confusion.
  - Decision-making/problem-solving difficulty.
  - Memory loss.
  - Fear/anxiety/anger.
  - Irritability/guilt/grief/ hopelessness.
  - Lack of perception.
  - Irrational activities.
- Delayed:
  - Fatigue.
  - Jumpiness.
  - Substance abuse.
  - Sleep disorders.
  - Decreased attention.
  - Difficulty concentrating.
  - Memory problems.
  - Flashbacks.
  - Depression/withdrawal.
  - Resentment/numbness.

### ***Coping with critical incident stress***

Operational debriefing, which involves clarifying events and providing education about normal responses and coping mechanisms, is almost always helpful.

Debriefing following an event(s), sometimes called defusing, should ideally be carried out by trained professionals, e.g., Team Leaders, with an understanding of the situation/environment/event that has caused the stress reactions. A debriefing may be needed even when there are no obvious stress reactions present. Stress reactions might be, as earlier said, delayed or even suppressed.

Experience shows that a structured group meeting started within the first 24 - 48 hours after the event helps team members cope. This process should be initiated by the Team Leader with the team members who were involved with the incident(s). The following are hoped for outcomes of a defusing:

- Clarify perceptions/misconceptions/consequences.
- Recognize and accept feelings and reactions.
- Reduce symptoms and long-term personal consequences.
- Facilitate mourning and grief.
- Strengthen and deepen learning from the event.
- Help each other and improve communication.
- Consolidate team cohesion.
- Improve capacity to return to action.
- Identify team members at-risk and refer for further consultation

Critical Incident Stress Debriefing is a structured method developed for first responders to review a stressful experience. It should be part of an overall Critical Incident Stress Management system. It is designed to be conducted in a group format. It is not a form of therapy. There is little research evidence that debriefing prevents psychopathology. A person identified to have Post-Traumatic Stress Disorder (PTSD) should be referred to professional mental health personnel.

The following points are intended to provide guidance in organizing a Critical Incident Stress Debriefing:

- Choose an informal and private setting.
- Non-mandatory but helpful if all participate.
- No one forced to talk.
- Leader provides a road map.
- Share who, what, where.
- Share perceptions and reactions.
- Don't look for errors - explain facts.
- Identify stressors/triggers.
- Most reactions are normal and ok.
- Listen, listen, listen – don't judge.

## 0.5. Medical emergencies and first aid

This section contains very basic information on medical emergencies and first aid. Most field medical situations you encounter are not immediately life threatening. The few that are may generally be addressed by anyone with basic first aid skills and a rational approach. Maintain a calm and thoughtful manner. Panic will cause or contribute to a “shock” response in the victim and may cause others to act irrationally as well. When confronted by a medical emergency, your first step is to determine whether or not you can safely and effectively render assistance. Do not move the victim unless you have to for your safety or his or hers. Once you have determined that you are not endangering yourself and that the victim is in a relatively safe position, get help if you are able to do so.

### **Warning**

There may be a risk to the first aid responder from the bodily fluids of the patient. These include blood, mucus, urine, and other secretions. You should take the steps necessary to protect yourself before attempting to treat the patient. Use surgical gloves if you have them. Also, it is strongly advised that you use a cardiopulmonary resuscitation (CPR) barrier device if giving mouth to mouth. A facemask will also reduce the potential for rescuer infection.

The Initial ABCs of medical emergencies/first aid

The basic steps in assessing your victim and initiating treatment are as follows:

- Airway
  - Open and maintain an adequate airway.
- Breathing
  - Check for breathing by listening at the mouth and watching the rise of the chest.
- Circulation
  - Check for circulation by feeling for a pulse at the wrist, ankle, or throat.

In a fully unconscious person you can clear the airway by using a “finger sweep” reaching into the back of the throat to remove a visible object but being careful not to push the object in further. Place them on their back, look inside the mouth, and do a finger sweep. If the victim is not unconscious, be careful not to get bitten. Falling unconscious and relaxing may loosen the object from the throat.

### **Choking**

The victim will be unable to speak or breathe effectively if their airway is obstructed. If they are coughing or gasping strongly for air, leave them alone. If they are unable to speak, trying to clear their throat, or coughing weakly, stay with them and carefully monitor their breathing. If the victim is unable to speak and puts their hands around their throat, act promptly; this is the universal sign for choking. Clearing the airway is easiest if the patient is standing. Step behind them, make a fist with one hand and place it over the abdomen, thumb

side towards the patient, between their navel and the bottom of their rib cage. With your other hand, grasp your wrist. With a sharp inward and upward thrust, compress the abdomen. Repeat until the airway is clear. If the person has passed out, is too big for you to reach around, or cannot be stood up, lay them flat on their back, turn their head to one side, and use an abdominal thrust with both hands similar to a CPR chest compression. Continue to monitor the ABCs and treat for shock, if indicated.

If you are able to clear the blockage but the patient has not resumed breathing, perform mouth-to-mouth resuscitation, part of cardiopulmonary resuscitation (CPR).

**1. Position the victim** - Lay the victim on his/her back. Kneel and position yourself at a right angle to the victim's body, with your knees perpendicular to the victim's neck and shoulders.

**2. Head tilt/Chin lift** - Position your palm on the person's forehead and gently push backward, placing the second and third fingers of your other hand along the side of the victim's jaw, tilting the head and lifting the chin forward to open the airway.

**3. Modified jaw thrust** - If you suspect a neck injury, a modified jaw thrust (without the head tilt) may be used. This is done by placing your hands on each side of the victim's face, your thumbs on the cheekbones but not pushing, and pulling the jaw forward with your index fingers. Again examine the mouth for foreign objects. If you find any, use the finger sweep to clear them.

**4. Check for breathing again** - Put your ear directly over the victim's mouth to listen and feel for air being exhaled. Look at the victim's chest to see if it is rising or falling.

**5. Mouth-to-mouth resuscitation** - Position yourself at a right angle to the victim's shoulder. Use the head tilt/chin lift manoeuvre and pinch the victim's nose closed, using your thumb and forefinger. Open your mouth wide and place it tightly over the victim's mouth. Exhale into the victim just enough to see the chest rise. Take another breath and repeat. Check to see if the victim's chest is rising when you exhale. If the stomach bulges the air is going into the stomach and not the lungs. The airway may still be blocked. Check the airway again.

**6. Check for a pulse** - After you have delivered your two breaths into the victim, check for a pulse using two fingers just to the side of the throat. If the victim has a pulse but is not breathing, continue mouth-to-mouth resuscitation, using the same technique of big breaths every 5 seconds (12 times/minute). Remove your mouth between breaths. Continue to check for signs of breathing and watch for chest movement. If the victim's breathing is weak, you may have to continue mouth-to-mouth, following the victim's breathing pattern, ensuring a

breath at least every 5 seconds.

**7. Restore circulation** - If you are unable to find a pulse in the victim, you must begin heart compressions to restore circulation. The compressions must be coordinated with the mouth-to-mouth resuscitation. Kneel and position yourself at a right angle to the victim's chest. Find the base of the breastbone at the centre of the chest where the ribs form a V. Position the heel of one hand on the chest immediately above the V; with the other hand, grasp the first hand from above, intertwining the fingers. Shift your weight forward and upward so that your shoulders are over your hands; straighten your arms and lock your elbows. Shift your weight onto your hands to depress the victim's chest (1 to 2 inches in an adult). Count aloud as you do it, five times in an even rhythm, slightly faster than 1 compression/second (80-100 beats/minute). Repeat the pattern for a total of 30 chest compressions.

**8. Continue breathing for the victim** - You must continue to give the victim oxygen through mouth-to-mouth resuscitation. Give two breaths. Repeat.

**9. Alternate pumping and breathing** - Pump the victim's chest 30 times, and then breathe for him or her twice. Establish regular rhythm, counting aloud. Check the pulse and breathing after four cycles. Continue until help arrives, if possible.

**10. Performing CPR on a child** - The procedure is essentially the same, but you use only one hand for chest compressions and pump the child's chest five times. You then breathe for the child once, more gently than you breathe for an adult.

**11. Two-person CPR** - One person provides breathing assistance while the other pumps the heart. Pump the heart at a rate of 80 to 100 beats per minute. After each five compressions, a pause in pumping is allowed for a breath to be given by the other person.

### ***Other emergency situations***

Once you know that your patient's ABCs are OK, you may move on to determining what other problems they may have. If you saw the injury occur and the patient is conscious and able to communicate effectively with you, this step is fairly simple.

If a language barrier exists or the patient is not conscious, it becomes more difficult. Be sensitive to cultural differences, especially when your patient is of another culture/gender.

### ***Shock***

The most commonly encountered form of shock in the field is traumatic shock, induced by injury. If left untreated, it may result in death. Always monitor for signs of shock and routinely treat for it in cases of severe injury. The patient may

be cold and clammy, have pale skin, a rapid weak pulse, rapid shallow breathing, or a combination of these symptoms. Except in cases of head injury, have the patient lie flat on their back and elevate their legs. Cover them with a blanket or other thermal cover and monitor the ABCs.

### ***Bleeding***

There are several ways to control the bleeding. These should be attempted, in the following order:

- Using a sterile gauze square, apply pressure directly over the wound. When it stops bleeding, tape or otherwise secure the gauze in place. Immediately removing the gauze may cause the bleeding to restart.
- If you have knowledge of the arterial pressure points, apply pressure, using one or both thumbs over the artery. Once this has controlled the bleeding, apply pressure bandages to the wound site.
- If you are unable to control the bleeding in any other way and professional help is many hours away, apply a tourniquet to the affected extremity. There is a high risk of losing the extremity, particularly if professional attention is not immediately available. This is a last resort.
- Bleeding from the torso does not lend itself to control by any method other than direct pressure to the wound. Elevation may help and if ice is available in sufficient quantity, it will also help.
- Bleeding from the head can usually be controlled by direct pressure, elevation, icing, or a combination of all three. Do not apply a tourniquet.

### ***Burns***

Burns may be three basic types: chemical, electrical, and thermal. The treatment for each is different, but in every case, treatment for traumatic shock should be part of your approach.

### ***Chemical burns***

These may arise from inadvertent spills when handling chemicals, coming in contact with improperly disposed chemicals and chemical waste, or chemical warfare acts. Take precautions to ensure that you are not contaminated or exposed to the chemicals before attempting treatment.

If you can determine the nature of the chemical that caused the burn, it will be helpful in determining the follow up treatment.

- Remove all contaminated clothing.
- Thoroughly rinse with copious amounts of clean, lukewarm water.
- Rinse for at least 20 to 30 minutes or longer, if possible.
- Seek professional medical attention as soon as possible, regardless of the apparent severity of the burn.

### **Electrical burns**

These usually stem from electrical shock. Before approaching the patient, be certain that no further risk of injury is present. If you know the patient is still in contact with the electrical source and you know it is low voltage, you may move the wire or the patient to a safe position with a dry pole or rope. If the wire is of unknown or high voltage, get professional help to shut off the current or move the wire. Attempting to do so yourself will likely result in an increase in the body count for this incident. Don't do it.

- As soon as it is safe to do so, check the ABCs and continue to monitor the patient. Patients with electrical burns often suffer cardiac or respiratory arrest.
- If there are evident burns, cover them loosely with sterile dressings.
- Seek professional help in treating the burns. Do NOT apply burn creams or ointments.

### **Thermal burns**

These range from mild sunburn to the severe burns associated with open flames, heated metal and scalding water. Thermal burns are categorized by degree. Appropriate treatment is keyed to the severity of the burn.

- First-degree burns.
  - Symptoms are minor swelling and redness of the affected area.
  - Apply cool running water or wet compresses as soon as possible, continuing until the pain subsides.
  - Leave the burned area exposed. Do NOT apply ointments or salves. If pain recurs, reapply cold water.
- Second-degree burns.
  - Symptoms are definite redness of the affected area, swelling, and blistering.
  - Treat as above for first degree burns for 15 to 30 minutes, preferably using sterile water.
  - Cover with a dry, sterile bandage.
  - Elevate the burned area and treat the patient for traumatic shock.
  - Seek professional help.
- Third-degree burns.
  - Typically, these are areas of deeper burning, surrounded by areas that display first and second degree burn characteristics. Charring or leathery appearances are also common.
  - Check the ABCs and continue to monitor them.
  - Treat for traumatic shock.
  - Cover the burned area with a sterile, no adhesive dressing.
  - Elevate the burned area.
  - Immediately seek professional help.

### **Fractures (broken bones)**

Usually, the patient will know if they have broken a bone. The symptoms are bruising around the fracture site, localized pain, deformity, and swelling. In treating a fracture, the objective is immobilization of the ends of the broken bone. Immobilize any fracture before moving the patient. This is especially important in the case of known or suspected spinal injury. When splinting a fracture, immobilize the adjacent joints as well as the fracture site. After splinting is completed and on a continuing basis until professionally treated, check circulation in the affected extremities. In the case of an open fracture (when the bone breaks the surface of the skin), you will most likely need to control the bleeding using pressure points instead of direct pressure. Monitor the patient for the onset of traumatic shock symptoms. Treat for shock routinely in fractures of major bones and open fractures. Get medical attention for open fractures.

### **Frostbite**

Frostbitten tissue will feel cold to your touch, and either numb or painful to the patient. In extreme cases, the tissue will turn white and harden. Do not attempt to thaw frozen tissue until you can ensure it will not be immediately refrozen. It is better to delay treatment a few hours than to refreeze previously frozen tissue. To treat, gently warm the affected areas in a heated space, using lukewarm water where it is possible to immerse the affected area. Give the patient warm fluids and be alert to signs of shock. Re-warming that is too rapid will cause circulatory problems and possibly worsen the tissue damage. If the tissue blisters, avoid breaking the blisters and cover the affected area with a dry gauze bandage. Prevent injured fingers, toes, etc., from rubbing against each other by placing gauze pads between them. Seek medical attention for all but mild cases, as there is risk of septicaemia and gangrene in more severe cases.

### **Heat exhaustion**

The patient usually sweats profusely, feels clammy to the touch, may complain of a headache or nausea, and may be disoriented and feel weak. If you suspect heat exhaustion but the patient is not sweating, see Heat Stroke, below. Get the patient out of the direct sun and cool them down by applying cold compresses and fanning. If they are conscious, give ORS and water, or plain water. If recovery isn't fairly immediate upon treatment, seek medical attention.

### **Heat Stroke**

The patient will have hot, dry skin and a temperature well above normal. This situation is life threatening and must be treated immediately and aggressively. In more advanced cases, the patient will lose consciousness and may convulse.

Get the patient out of the sun and into a cool space. Remove their clothing and immerse them in cold (NOT icy) water until the onset of shivering. Seek medical attention. You must immediately lower the body temperature or it is quite likely that the patient will die.

### ***Hypothermia***

The patient will shiver in the early stages of hypothermia, but once the body core temperature goes below about 32°C or 90°F, shivering may stop. The victim will be uncoordinated and may demonstrate mental confusion, slurred speech, and irrational behaviour. Merely bringing the patient into a warm space will not reverse severe cases. Remove any wet or constricting clothing, place the patient in a pre-warmed bed or sleeping bag, and add water bottles of warm (NOT hot) water around the torso. If warm water is not available, use one or more warm, dry rescuers in the sleeping bag or bed to provide heat.

If the patient is sufficiently conscious to protect their airway, give them warm (38 – 45°C or 100 -115°F) fluids such as lemonade or Tang. This provides readily absorbed fuel (sugar) and a means to provide heat to the body core. Do NOT give coffee, tea, other stimulants, or any form of alcohol. The patient has lost the ability to produce sufficient heat and heat must be provided externally. While this is a “cold” injury, it is most common at temperatures above freezing and in wet, windy conditions.

