Highlights and Hong Kong Red Cross Review
Panel Comments of International Federation
of Red Cross and Red Crescent Societies
International First Aid and Resuscitation
Guidelines 2011

10 September 2011
Highlights and Hong Kong Red Cross Review Panel Comments of International Federation of Red Cross and Red Crescent Societies (IFRC) International First Aid and Resuscitation Guidelines 2011

Introduction

• This “highlights” summarizes the key issues and changes in the IRFC International First Aid and Resuscitation Guidelines 2011.

• It is the first international first aid guideline (referred to as the guideline) produced by the International Federation of Red Cross and Red Crescent Societies (IFRC) and is intended to foster harmonization of first aid practices among the Red Cross Red Crescent National Societies and provide a true evidence base to these practices.

• The guideline evaluates and reports on the science behind first aid and resuscitation. It is part of quality assurance to ensure that the general public and volunteers are receiving first aid training in accordance with the IFRC standard.

• In Strategy 2020, Red Cross Red Crescent societies are asked to do more, do better and reach further. This guideline provides our National Societies a solid base to “do better” in first aid. Promoting first aid and using proven prevention techniques to address the negative impact on health caused by urbanisation can build the capacity of local communities and the National Societies in both preparedness and response.

• In 2008, the IFRC participated in a strategic collaboration with the International First Aid Science Advisory Board, which is co-chaired by the American Red Cross. The IFRC participating team is led by Dr Pascal Cassan, the coordinator of the European Reference Centre for First Aid Education. Experts were nominated by the different zones. Representatives from the American Red Cross, Austrian Red Cross, Canadian Red Cross, Egyptian Red Crescent Society, Grenada Red Cross Society, Hong Kong Red Cross, Hungarian Red Cross, Norwegian Red Cross and Red Cross Society of China joined the process.

• Whereas the Red Cross Movement has been the leader in first aid science, education and practice, National Societies have traditionally worked in partnership with local resuscitation councils and their parent organizations, the International Liaison Committee on Resuscitation (ILCOR) on resuscitation science and education. This document and process represents the IFRC scientific evidence and expertise in first aid, resuscitation and the education of the public in these lifesaving topics, supplemented by the important evidence work of others in this field, including the European Red Cross Red Crescent First Aid Education Network, the American Red Cross Scientific Advisory Council (SAC), the International First Aid Science Advisory Board and ILCOR.

• Based on these efforts, the IFRC developed its first international first aid guideline to advance our evidence basis in first aid practice and education. The team conducted a thorough review of the scientific literature, and evaluated and graded the level of evidence in specific first aid topics. This review included past work done by many components of the Red Cross Movement, including evidence-based guidelines created by National Societies, the work of the European Reference Centre for First Aid Education and the Psychosocial Reference Centre.
- The strength of all guidelines and conclusions is related to the scientific evidence on which they are based. Therefore, all guidelines have been derived from critical review of the available literature (including the strength of the study designs), standard reference materials, textbooks, and expert opinion.

- Based on the source and strength of the scientific evidence, all guidelines are classified as standard (***) or recommendation (**). A guideline strength is provided both for performing an action and for not performing an action.

<table>
<thead>
<tr>
<th>Strength of guideline and terms used</th>
<th>Description and strength of evidence</th>
<th>Implications</th>
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</thead>
<tbody>
<tr>
<td><strong>Standard (</strong>*)**</td>
<td>• The strongest recommendation</td>
<td>Must be followed unless a clear and compelling rationale for an alternative approach is present</td>
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<tr>
<td>Term: must (or must not)</td>
<td>• High degree of scientific certainty</td>
<td></td>
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<tr>
<td></td>
<td>• Supporting evidence is of excellent quality (obtained from well designed, prospective, randomised controlled studies)</td>
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<td></td>
<td>• Anticipated benefits clearly exceed the harms.</td>
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<tr>
<td>Note: In some clearly identified circumstances, high-quality evidence may be impossible to obtain, but the anticipated benefits strongly outweigh the harms.</td>
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<tr>
<td><strong>Recommendation (</strong>)**</td>
<td>• Moderate degree of scientific certainty</td>
<td>Prudent to follow, but one should remain alert to new information</td>
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<tr>
<td>Term: should (or should not)</td>
<td>• Based on less robust evidence (non-randomised cohort studies, case-control studies, retrospective observational studies and/or expert opinion and consensus)</td>
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<tr>
<td></td>
<td>• Anticipated benefits exceed the harms, but the quality of evidence is not as strong as above.</td>
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<tr>
<td>Note: Again, in some clearly identified circumstances, high-quality evidence may be impossible to obtain, but the anticipated benefits strongly outweigh the harms.</td>
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<tr>
<td><strong>Option (*)</strong></td>
<td>• Results from all other evidence, publications, expert opinion, etc.</td>
<td>May be considered in decision-making but one should remain alert to new published evidence that clarifies the balance of benefit versus harm</td>
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<tr>
<td>Terms: may, could (or not recommended)</td>
<td>• The least compelling in term of scientific evidence</td>
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<tr>
<td></td>
<td>• Define courses that may be taken when the quality of evidence is suspect, the level or volume of evidence is small or carefully performed studies have shown little clear advantage to one approach over another</td>
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</table>

**Note:**
- Medical information changes constantly, and, therefore, should not be considered current, complete or exhaustive. You should not rely on the information in the guidelines to recommend a course of treatment for you or any other individual; doing so is solely at your own risk.

- These guidelines provide general information for educational purposes only. They are not designed to and do not provide medical advice, professional diagnosis, opinion, treatment or services for you or any other individual. They are not a substitute for medical or professional care, and the information should not be used in place of a visit, call consultation or advice of a physician or other healthcare provider. The IFRC is not liable or responsible for any advice, course of treatment, diagnosis or any other information, services or product you obtain through these guidelines.
<table>
<thead>
<tr>
<th>Topic</th>
<th>Guidelines</th>
<th>Hong Kong Red Cross Review Panel Comments</th>
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</thead>
<tbody>
<tr>
<td>General Principles</td>
<td></td>
<td>➢ Hong Kong pre-hospital resuscitation is rendered under Hong Kong Fire Service Department and various departments. The system can be initiated through an emergency number of 999.</td>
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<tr>
<td>General approach to the victim</td>
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<tr>
<td>Call for help/EMS/further help</td>
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<tr>
<td>Medication administration</td>
<td></td>
<td>➢ First aid provider, like lay person, is not authorized to prescribe medications to others in Hong Kong.</td>
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<td>➢ However, first aid provider may assist victim to take medication when</td>
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<td>- The situation is well-defined (e.g., decompression sickness by a diver, acute chest pain, etc.).</td>
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<td>- <strong>AND</strong> The victim is suffering from a deterioration of a known chronic illness (e.g., allergy) and a physician ordered a certain medicine for such a situation, the medicine is available, and the victim would like (or is supposed) to administer it but needs help.</td>
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<td>- <strong>AND</strong> The first aid provider has the knowledge and experience to:</td>
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<tr>
<td></td>
<td></td>
<td>• recognize the situation</td>
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<tr>
<td></td>
<td></td>
<td>• understand the contraindications to and dangers of administering a certain medicine</td>
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<td></td>
<td></td>
<td>• administer the medicine exactly as prescribed</td>
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</tbody>
</table>
| **Use of Oxygen** | ➢ First aid providers may administer oxygen to victims experiencing shortness of breath or chest pain (option*).  
➢ Oxygen may be beneficial for first aid in scuba divers with a decompression injury (recommendation**). | ➢ Oxygen can be beneficial for victims of decompression illness if being administered by a well trained first aid provider.  
➢ The maintenance, storage and care of oxygen cylinders need specific knowledge, skills and facilities. It is therefore not practical for first aid provider to be equipped with oxygen therapy. When oxygen therapy is anticipated, first aid provider should call for help early. All ambulances in Hong Kong are equipped with oxygen for therapy. |
| **Patient Positioning** | ➢ An unresponsive, spontaneously breathing person may be placed in any side-lying recovery position versus the supine position (option*).  
➢ If a person with a suspected cervical spine injury must be turned onto his or her side, the HAINES appears to be safer than the lateral recumbent position; therefore, the victim may be placed in the HAINES position (option*).  
➢ If the victim is pregnant, the left lateral position is preferred for side-lying or when HAINES position is used (option*).  
➢ For shortness of breath (use of oxygen), chest pain and shock/fainting, see the relevant sections. | ➢ Nil additional comment. |
First aid providers should not be expected to recognize the signs and symptoms of anaphylaxis without training and experience (recommendation**).

First aid providers should be trained and experienced in recognizing the signs and symptoms of anaphylaxis (recommendation**).

Epinephrine must be used to treat anaphylaxis with life-threatening features (standard***).

- First aid providers should be familiar with the epinephrine auto-injector so that they can help someone having an anaphylactic reaction self-administer the epinephrine (recommendation***).
- Epinephrine should be given only when symptoms of anaphylaxis are present (recommendation***).
- First aid providers may be allowed to use an auto-injector if the victim is unable to do so, provided that the medication has been prescribed by a physician and state law permits.
- Use of an epinephrine auto-injector for a patient for whom it is not prescribed may be considered with appropriate training (option*).

First aid provider, like lay person, is not authorized to prescribe and give medications to others in Hong Kong.

It is more common to use the name of adrenaline instead of epinephrine in Hong Kong.
- An empiric second dose of epinephrine as a first aid measure to treat an anaphylactic allergic reaction is not recommended (option*).
- For shortness of breath and shock, see the relevant sections.

### Breathing Difficulties

#### Asthma

First aid providers are not routinely expected to make a diagnosis of asthma, but when a person is experiencing difficulty breathing, they must assist the person with a bronchodilator under the following conditions (standard***):

- The victim states that he or she is having an asthma attack and has medications (e.g., a prescribed bronchodilator) or an inhaler.
- The victim identifies the medication and is unable to administer it without assistance.
- First aid providers may be trained and may administer a bronchodilator to a victim experiencing breathing difficulties (option*).
- Victims with any breathing difficulty may be moved to a position of comfort, with loosening of any restrictive clothing (option*).

It is more common to use the name of salbutamol instead of albuterol in Hong Kong.

#### Hyperventilation

- If unclear whether the victim is experiencing hyperventilation or other breathing emergency, first aid providers should treat the victim as if there is a breathing emergency (recommendation**).

Nil additional comment.
For confirmed hyperventilation, a rebreathing bag may be used (option*).

<table>
<thead>
<tr>
<th>Foreign Body</th>
<th>Airway Obstruction</th>
<th>Nil additional comment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Combination of back blows followed by chest compression should be used for clearance of FBAO in conscious infants ≤1 year old (recommendation**).</td>
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<tr>
<td>➢ Chest thrusts, back blows or abdominal thrusts are equally effective for relieving FBAO in conscious adults and children &gt;1 year old (recommendation**).</td>
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<td>➢ Although injuries have been reported with the abdominal thrust, there is insufficient evidence to determine whether chest thrusts, back blows or abdominal thrusts should be used first in conscious adults and children &gt;1 year old (recommendation**).</td>
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<tr>
<td>➢ These techniques should be applied in rapid sequence until the obstruction is relieved; more than one technique may be needed in conscious adults and children &gt;1 year old (recommendation**).</td>
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<tr>
<td>➢ Unconscious victims should receive chest compressions for clearance of the foreign body in adults and children &gt;1 year old (standard***).</td>
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</tbody>
</table>
Unconscious infants ≤1 year old should receive either a combination of back blows followed by chest compression, or chest compressions alone for clearance of FBAO (**recommendation**).

The finger sweep can be used in unconscious adults and children >1 year old with an obstructed airway if solid material is visible in the airway (**option**).

There is insufficient evidence for a different treatment approach for an obese or pregnant victim with FBAO (**option**).

**Poisoning**

- In rendering first aid to a poison victim, the first priority is the safety of the rescuer/first aid provider, meaning that any direct contact with gases, fluids or any other material possibly containing poisons should be avoided (**recommendation**).

- For victims who have ingested a caustic substance, administration of a diluent by a first aid provider is not recommended (**option**). But in remote areas where further care is delayed or when advised to do so by a poison control centre, EMS or local equivalent, giving a diluent (milk or water) may be appropriate (**option**).

- Hong Kong Poison Information Centre provides toxicology consultation service.

- Potential poisoned victim should be transferred to health care facilities as soon as possible for early treatment.

- In case of witnessed caustic agent ingestion, first aid provider may ask the victim to drink a cup of milk or water (about 150cc).

- For caustic injury to skin or eye where there is no tap water available, bottled water or any clean water should serve a good alternative.

- In Hong Kong, poison information service is only available for health care provider. First aid providers are not recommended to give activated charcoal to victims.
- Activated charcoal should be used as a first aid measure only on the direction of a poison control centre or equivalent agency (recommendation**).

- Ipecac syrup must not be used by the lay public as a first aid treatment in acute poisoning (standard***).

- To treat skin or eye exposure to acid and alkali, first aid providers should immediately irrigate the skin or eye with copious amounts of tap water (recommendation**).

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**Carbon monoxide**

- First aid providers may attempt rescue if trained and able to perform safely (option*).

- All doors and windows should be opened (recommendation**).

- Move the victim out of the area with the gas, but only if this can be done without endangering the first aid providers (option*).

- First aid providers if trained should administer oxygen to victims of CO poisoning (recommendation**).

- If the victim is unconscious, maintain a patent airway and perform rescue breathing if needed (option*).

- Most cases of carbon monoxide poisoning in Hong Kong are due to charcoal burning from suicidal attempt. Hence, collection of evidence for suicidal attempt or even co-suicidal ingestion of drugs may be helpful for health care providers when treating the victims.
Victims experiencing chest pain must be assisted with taking their prescribed aspirin (standard***).

If the victim experiencing chest pain believed to be cardiac in origin has not taken an aspirin, the first aid provider should give him or her aspirin as either one adult tablet (325 mg or other adult tablet dosage) not enteric coated, or two low-dose “baby” aspirin (81 mg), unless there is a contraindication, such as an allergy or bleeding disorder (recommendation**).

The first aid provider should assist the patient with administration of his or her prescribed nitrate (recommendation**).

If trained, the first aid provider may administer a nitrate to a victim experiencing chest pain (option*).

The first aid provider may bring a victim experiencing chest pain to a comfortable position (usually semi-sitting based on local protocols) and ask the victim to refrain from physical activity (option*).

A first aid provider may administer oxygen to a victim with chest pain if the first aid provider is trained and oxygen is available, but use of oxygen should not delay other actions (option*).

First aid providers, like lay person, are not authorized to prescribe medications to others in Hong Kong. However, first aid providers should assist victim to take prescribed medications like nitrate or aspirin.

It is not practical for first aid providers to be equipped with oxygen in Hong Kong. First aid providers should call for early help and all ambulances in Hong Kong are equipped with oxygen for therapy.

First aid providers, like lay person, are not authorized to prescribe medications to others in Hong Kong. However, first aid providers should assist victim to take prescribed medications like nitrate or aspirin.

It is not practical for first aid providers to be equipped with oxygen in Hong Kong. First aid providers should call for early help and all ambulances in Hong Kong are equipped with oxygen for therapy.
| Stroke                                                                 | First aid providers should be able to recognize early signs of stroke and call EMS as soon as possible (recommendation**).  
<table>
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<tr>
<td>First aid providers should bring the victim to a comfortable position (usually semi-sitting or semi-prone, based on local protocols), ask the victim to refrain from physical activity, and regularly check consciousness and breathing (option*).</td>
<td>In Hong Kong, first aid providers should call ambulance and transfer the patient to hospital as soon as possible.</td>
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</tbody>
</table>
| Dehydration/ gastrointestinal distress                                  | For dehydration, first aid providers should rehydrate using an oral rehydration solution (recommendation**).  
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<tbody>
<tr>
<td>For diarrheal illness, first aid providers may place the victim in a horizontal position. If there is considerable abdominal pain, bending the hips and knees may be helpful (option*).</td>
<td>Nil additional comment.</td>
</tr>
<tr>
<td>Either a commercially prepared oral rehydration solution or a preprepared salt package for oral rehydration that complies with World Health Organization recommendations for ORS solutions should be used (recommendation**). In the absence of pre-prepared solutions, a homemade solution may be used (option*).</td>
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</table>
A person with diabetes who is experiencing a diabetic emergency must be instructed to test his or her blood glucose level (standard***).

If trained, first aid providers may check the blood glucose level of a victim experiencing a diabetic emergency (option*).

A victim experiencing a diabetic emergency due to hypoglycemia or if it is unknown whether the emergency is due to hypo or hyperglycemia must be encouraged to treat themselves with sugar containing food or drink (standard***).

In a diabetic emergency, the victim must be given 20 grams of glucose, preferably using an oral glucose tablet (20 g); if a tablet is not available, less effective methods (in priority of effectiveness) include glucose gel, orange juice (340 g or 1/3 L) or granular table sugar (20 g) (standard***).

First aid providers should administer glucose (as a sugar containing food or drink) to a person with diabetes who is experiencing hypoglycemia or if it is unknown whether the emergency is due to hypo or hyperglycemia (recommendation**).

Most first aid providers are not equipped with machine to check the blood glucose level in Hong Kong.
<table>
<thead>
<tr>
<th><strong>Shock</strong></th>
<th>Victims showing signs and symptoms of shock should be placed in a supine position if tolerated (recommendation**).</th>
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<tbody>
<tr>
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<td>For victims experiencing shock, body temperature should be maintained and heat loss prevented (recommendation**).</td>
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<td>For victims experiencing shock without evidence of spinal injury, the legs may be raised 6-12 inches (option*).</td>
</tr>
<tr>
<td><strong>Unconsciousness/altered mental status</strong></td>
<td>For the unconscious victim, first aid providers should ensure a patent airway, determine if breathing is present, position the victim and call for EMS (recommendation**).</td>
</tr>
<tr>
<td><strong>Convulsions and seizures</strong></td>
<td>First aid providers may place a seizure victim on the floor and prevent him or her from being injured (option*).</td>
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<td>Once the seizure has ended, first aid providers should assess the airway and breathing and treat accordingly (recommendation**).</td>
</tr>
<tr>
<td><strong>Injuries</strong></td>
<td>Burns must be cooled with cold water (15-25°C [59-77°F]) as soon as possible, and the provider should continue to cool the burn until pain resolves (standard***).</td>
</tr>
</tbody>
</table>
- First aid providers should avoid cooling burns with ice water for longer than 10 minutes, especially if burns are large (>20% total body surface area). Ice should not be applied to a burn (recommendation**).

- Because the need for blister debridement is controversial and requires equipment and skills that are not consistent with first aid training, first aid providers should leave burn blisters intact and cover them loosely (recommendation**).

- To treat skin or eye exposure to acid or alkali, first aid providers must immediately irrigate the skin or eye with copious amounts of tap water (standard***).

- All electrical burns should have a medical evaluation (recommendation**).

**Bleeding**

- First aid providers must control external bleeding by applying direct pressure (standard***).

- The use of pressure points and elevation is not recommended (option*).

- First aid provider is not recommended to use any commercial hemostatic agents for wound management.
When direct pressure fails to control life-threatening bleeding or is not possible (e.g., multiple injuries, inaccessible wounds, multiple victims), tourniquets should be used in special circumstances (such as disaster, war-like conditions, remote locations or specially trained first aid providers) (recommendation**).

Cooling of the distal limb should be considered if a tourniquet needs to remain in place for a prolonged time (recommendation**).

The out-of-hospital application of a topical hemostatic agent to control life-threatening bleeding not controlled by standard techniques could be considered with appropriate training (option*).

**Head and Spinal Injuries**

**Concussion**

- Persons with concussion should rest, both physically and cognitively, until their symptoms have resolved both at rest and with exertion (recommendation**).

- Any person who sustains a concussion should be evaluated by a health care professional, ideally with experience in concussion management, and receive medical clearance before returning to athletics or other physical activity (recommendation**).

Nil additional comment.
Persons with a concussion should never return to athletics or physical activity while symptomatic at rest or with exertion (recommendation**).

Athletes also should not be returned to play on the same day of the concussion, even if they become asymptomatic (recommendation**).

**Head trauma**

Any head trauma with loss of consciousness greater than 1 minute must have emergency medical evaluation and care (standard***).

Victims of minor closed head injury and brief loss of consciousness (1 minute) should be evaluated by a healthcare professional and be observed (recommendation**).

Observation should be done in the office, clinic, emergency department, hospital or home under the care of a competent caregiver (recommendation**).

Victims of minor closed head injury and no loss of consciousness may be observed in the home, under the care of a competent caregiver (option*).

Attention should be paid to airway and breathing in all victims with a head injury (recommendation**).
Spinal injury

- Considering the serious consequences of spinal cord injury, most experts agree that spinal motion restriction should be the goal of early treatment of all victims at risk of spinal injury. First aid providers should restrict spinal motion by manual spinal stabilization if there is any possibility of spinal injury (recommendation**).

- Because of the absence of any evidence supporting the use of immobilization devices in first aid and with some evidence suggesting potential harm even when these devices are used by health care providers, first aid providers should not use spinal immobilization devices unless specifically trained (recommendation**).

- Spinal immobilization devices may be used by specially trained providers or in remote locations where extrication is necessary (option*).

- First aid providers cannot conclusively identify a victim with a spinal injury but should suspect spinal injury if an injured victim has any of the following risk factors: (recommendation**)
- Age ≥65 years old
- Driver, passenger or pedestrian, in a motor vehicle, motorized cycle or bicycle crash
- Fall from a greater than standing height
- Tingling in the extremities
- Pain or tenderness in the neck or back
- Sensory deficit or muscle weakness involving the torso or upper extremities
- Not fully alert or intoxicated
- Other painful injuries, especially of the head and neck
- Children <3 years old with evidence of head or neck trauma

First aid providers should assume all victims with a head injury may have a spinal cord injury (**recommendation**).

<table>
<thead>
<tr>
<th>Chest and Abdominal Injuries</th>
<th>Nil additional comment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ For open chest wounds, first aid providers may apply either a simple dressing or a three-sided occlusive dressing (<strong>option</strong>).</td>
<td>➢ For chest and abdomen injuries, first aid providers should manage shock and place the victim in a comfortable position (<strong>recommendation</strong>).</td>
</tr>
</tbody>
</table>
For open abdominal wounds, first aid providers may place moist dressings on the wound and maintain body temperature to prevent heat loss (option*). First aid providers should not push back viscera (recommendation*).

First aid providers should stabilize impaled objects (option*).

Injured extremity

First aid providers should assume that any injury to an extremity can include a potential bone fracture and manually stabilize the injured extremity in the position found (recommendation**).

For remote situations, wilderness environments or special circumstances with a cool and pale extremity, straightening an angulated fracture may be considered by trained first aid providers (option*).

A sprained joint and soft-tissue injury should be cooled, preferably with a cold therapy that undergoes a phase change (recommendation**).

Cold should not be applied for >20 minutes (recommendation**).

Since the ambulance response time is relatively short in Hong Kong, first aid provider should not attempt to straighten angulated fractures or dislocated joints in most circumstances.

In cases with cool and pale extremity, the information should be conveyed to the emergency call centre.
There is insufficient information to make recommendations on optimal frequency, duration and initial timing of cryotherapy after an acute injury (option*).

| Wounds and Abrasions | Superficial wounds and abrasions should be irrigated with clean water, preferably tap water because of the benefit of pressure (**recommendation**).
|----------------------| First aid providers should apply antibiotic ointment to skin abrasions and wounds to promote faster healing with less risk of infection (**recommendation**).
|----------------------| First aid providers should apply an occlusive dressing to wounds and abrasions with or without antibiotic ointment (**recommendation**).
|----------------------| The use of triple antibiotic ointment may be preferable to double- or single-agent antibiotic ointment or cream (option*).
|----------------------| If antibiotic is not used, antiseptic could be used (option*).
|----------------------| There is some evidence that traditional approaches, including honey, are beneficial and may be used on wounds by first aid providers (option*).
|----------------------| In Hong Kong, antibiotics ointment cannot be prescribed by First aid provider.
| **Dental Injuries** | It is not recommended for first aid providers to reimplant an avulsed tooth *(option*).*  
Avulsed teeth may be stored in milk and transported with the injured victim to a dentist as quickly as possible *(option)*. | Milk, victim’s own saliva, saline and water are acceptable as a transport medium of the avulsed tooth in Hong Kong. |
| **Eye injuries** | Any object impaled in the eye may be left in place, and eye movement minimized *(option)*. | Nil additional comment. |
| **Environmental Health Problems** | When providing first aid to a victim of frostbite, re-warming of frozen body parts should be done only if there is no risk of refreezing *(recommendation)**.  
For severe frostbite, re-warming should be accomplished within 24 hours *(recommendation)**.  
Re-warming should be achieved by immersing the affected part in water between 37°C (i.e., body temperature) and 40°C (98.6°F and 104°F) for 20-30 minutes *(recommendation)**.  
Chemical warmers should not be placed directly on frostbitten tissue, because they can reach temperatures that can cause burns and exceed the targeted temperatures *(recommendation)**.  
After re-warming, efforts can be made to protect frostbitten parts from refreezing and to quickly transport the victim for further care *(option)*. | Frostbite is rare in Hong Kong as it is situated in the subtropical region. |
- Affected body parts may be dressed with sterile gauze or gauze placed between digits until the victim can reach medical care (option*).

- The use of non-steroidal anti-inflammatory drugs for treatment of frostbite as part of first aid is not recommended based on potential side effects of these drugs (e.g., allergies, gastric ulcer bleeding) (option*).

**Hypothermia**

- Victims of hypothermia who are responsive and shivering vigorously should be re-warmed passively with a polyester-filled blanket (recommendation**).

- For victims of hypothermia who are not shivering, active warming should be started, with a heating blanket if available (recommendation**).

- For passive re-warming, if a polyester-filled blanket is not available and the victim is responsive and shivering, other options can be used, including any dry blanket, warm dry clothing or reflective/metallic foil (option*).

- In Hong Kong, hypothermia is more common in neglected elderly during cold front compared to accidental exposure to cold environment during outdoor activities.
- For active re-warming, if a heating blanket is not available and the victim is not shivering, other options can be used, including a hot water bottle, heating pads or warm stones. Do not apply directly to the skin to prevent burning the person (option*).

- In all cases, victims should be treated gently, removed from the cold stress and have their wet clothes removed; if the patient is moderately to severely hypothermic, clothes should be cut off to minimize movement (recommendation**).

- Care should then be taken to insulate the victim and provide a vapour barrier if possible to minimize conductive/convection and evaporative heat loss, respectively (option*).

<table>
<thead>
<tr>
<th>Health Problems caused by Heat</th>
<th>Heat stroke victims must be immediately cooled by any means possible (standard***).</th>
<th>Heat stroke is a life threatening emergency. The absence of sweating, with hot red or flushed dry skin is a late sign. First aid provider should recognize and call for help the patient as soon as possible.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Stroke</td>
<td>First aid providers should immerse the victim in water as cold as possible up to the chin (recommendation**).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Circulating water should be used over static water (recommendation**).</td>
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</tbody>
</table>
For a victim of heat stroke, if water immersion is not possible or delayed, the victim should be doused with copious amounts of cold water, sprayed with water, fanned, covered with ice towels or have ice bags placed over the body *(recommendation**).*

| **Heat exhaustion** and **heat syncope** | Heat exhaustion should be treated by oral rehydration with a salt-containing beverage *(recommendation**).*  
| ➢ Victims of heat exhaustion should be removed from the hot environment if possible and/or cooled with a fan, ice bags, or water spray *(recommendation**).* | First aid provider should recognize and treat heat exhaustion promptly as these patients may deteriorate into life-threatening heat stroke. |

| **Heat cramps** | Victims experiencing heat cramps should be encouraged to drink a salt-containing beverage *(recommendation**).*  
| ➢ While victims of heat cramps are drinking, the affected muscle may be stretched. Cooling and massaging of the muscle during the stretch might also be useful *(option*) | Nil additional comment. |

| **Fluid Therapy for Dehydration (Not Environmental unless due to Heat)** | Rehydration after exercise-induced dehydration is best treated with oral fluids *(standard***).* | Nil additional comment. |
The best fluid for rehydration is a carbohydrate electrolyte beverage, but if one is not readily available, water should be used (recommendation**).

The amount of fluid provided for oral rehydration should exceed fluid losses (recommendation**).

<table>
<thead>
<tr>
<th><strong>Health problems caused by high altitude</strong></th>
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</thead>
<tbody>
<tr>
<td>➢ Victims of AMS should descend or stop ascent and wait for improvement. Continuing ascent with symptoms is not recommended (recommendation**).</td>
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</tr>
<tr>
<td>➢ Victims of HACE and HAPE should descend as soon as possible (recommendation**).</td>
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</tr>
<tr>
<td>➢ Continued ascent by experienced climbers or other victims if extrication requires ascent before descent may be done after symptoms have resolved, but if illness progresses descent is mandatory (option*).</td>
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</tr>
<tr>
<td>➢ For first aid providers trained in its usage, oxygen may be administered to victims of AMS, HACE and HAPE (option*).</td>
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</tr>
<tr>
<td>➢ First aid providers may assist victims with their prescribed medication for altitude illness, such as acetazolamide or dexamethasone, based on label instructions (option*).</td>
<td></td>
</tr>
<tr>
<td>➢ Acute mountain sickness unlikely occurs in Hong Kong. Ataxia (Incoordination of walking) is one of the most important signs of high altitude cerebral edema.</td>
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</tbody>
</table>
- First aid providers should keep victims of altitude illness from becoming chilled or overheated (**recommendation**). This is especially important for victims of HAPE.

<table>
<thead>
<tr>
<th>Animal- related health impairments</th>
<th>Animal bites</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Human and animal bite wounds should be copiously irrigated to minimise risk of bacterial and rabies infections (<strong>recommendation</strong>).</td>
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</tr>
<tr>
<td>✓ The victim should be taken for further medical care as soon as possible for surgical intervention, vaccination, or drug therapy as needed (<strong>recommendation</strong>).</td>
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<table>
<thead>
<tr>
<th>Snakebites</th>
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</thead>
<tbody>
<tr>
<td>✓ Suction should not be applied to snake envenomation, because it is ineffective and may be harmful (<strong>recommendation</strong>).</td>
</tr>
<tr>
<td>✓ Properly performed compression and immobilization of extremities should be applied in first aid after snakebite envenomation (<strong>recommendation</strong>).</td>
</tr>
<tr>
<td>✓ When performing compression for a snakebite, the pressure applied should be between 40 and 70 mmHg (<strong>recommendation</strong>). This can be determined by a compression bandage that will allow a finger to be inserted underneath (<strong>option</strong>).</td>
</tr>
</tbody>
</table>

| Early notification of ambulance service for rapid transfer to a health care facility for early medical attention is the most important part, especially in Hong Kong where transfer to hospital is swift. |
| It is because some snakebite may be lethal and any significant snakebite warrants early assessment of toxicity by a doctor. |
| Early notification of ambulance is more important than compression treatment. On the other hand, more than 80% of poisonous snakebite is caused by green bamboo snake in Hong Kong. Compression treatment to this kind of snakebite may be more damaging than beneficial. |
- There are no studies to recommend for or against limb elevation after snake bite envenomation.

- To help the later management of the snakebite such as identify the correct antivenin, the first aid provider can help to memorize the features of the snake if it is still there. For better identification, the taking of picture of the snake is more advisable than actually killing of the snake which may result in more snakebite.

- The contact of local biological centre by a first aider is not effective in Hong Kong. It is because contacting local centre and finding the right anti-venom is the duty of the hospital medical personnel instead of the first aider.

- Hong Kong Poison Information Centre can help with adding information on local snakes.

- Some people advocate putting the affected body part in the position below the heart level. There is no evidence to support this.

<table>
<thead>
<tr>
<th><strong>Jellyfish</strong></th>
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<tbody>
<tr>
<td>- For areas with lethal jellyfish, first aid providers should immediately summon EMS, and assess and treat airway, breathing and circulation while providing other therapies (recommendation**).</td>
</tr>
<tr>
<td>- All jellyfish stings should be washed with a large volume of vinegar (4-6% acetic acid solution) to both prevent further envenomation and inactivate</td>
</tr>
</tbody>
</table>

- Most scientific evidences come from research on the more dangerous species like box jellyfish, which are not common in Hong Kong. There are 5 to 6 types of jellyfish commonly seen in Hong Kong seashore. One particular species that diver in Hong Kong needs to avoid is the lion’s mane jellyfish (Cyanea Capillata), which is one of the largest known jellyfish species in the world.
nematocysts. If vinegar is not available, a baking soda slurry may be used instead to both prevent further envenomation and inactivate nematocysts (recommendation**). This should be done as soon as possible and continue for at least 30 seconds. If the jellyfish is positively identified as “bluebottle” (Physalia utriculus), vinegar should not be used because it triggers further envenomation (recommendation**).

- Topical application of aluminum sulfate, meat tenderizer or water is not recommended for the relief of pain (recommendation**).

- If vinegar is not available after a jellyfish sting, any adherent tentacles may be picked off with fingers with proper protection of the rescuers, and the stung area rinsed well with seawater to remove stinging cells that are seen (option*).

- After treatment to remove and/or deactivate nematocysts, hot water immersion should be used to reduce pain (recommendation**). The hot water immersion should continue until pain is resolved or at least 20-30 minutes (recommendation**).

- Jellyfish sting can be prevented by wearing personal protective equipment. A recent sunblock with jellyfish sting protective lotion (Safe Sea@) showed good evidence of protection.

- First aid provider should avoid direct contact when treating jellyfish sting to prevent secondary sting. He should also deactivate the stinging cells and remove all the tentacles attached to the skin.

- People legendarily use various substances like urine to treat jellyfish sting. There is no evidence that urine helps. Like fresh water, it may even worsen the injury. Vinegar can inactivate the stinging cells of the tentacles attached to skin; seawater can be used if vinegar is not available. Shaving the affected area with knife, safety razor or credit card can help to remove the tentacles.

- It is not common for first aiders to be equipped with thermometer to measure the exact water temperature. Also, 45C can be too high a temperature for some people like small children to tolerate with tender skin. The usual practical principle is water "as hot as one can tolerate". Most authorities use either 42C or a range 42 to 45C.
- In the absence of hot water, dry heat or cold packs may be used for pain (option*).

- In certain regions based on the species of jellyfish, cold therapy may be instituted instead of hot water immersion for pain relief (option*).

- The victim should be instructed in hot water immersion, consisting of the following:
  - Take a hot shower or immerse the affected part in hot water as soon as possible.
  - Use water at a temperature as hot as can be tolerated, or at 45°C (113°F) if the water temperature can be regulated.
  - Continue for at least 20-30 minutes or for as long as pain persists.

- If hot water is not available, dry hot packs or, as a second choice, dry cold packs may also be helpful in decreasing pain (option*).

- Pressure bandages are not recommended for the treatment of jellyfish stings (recommendation**).
| Insects | ➢ To remove a tick, grab the tick as close to the skin as possible with a very fine forceps/tweezers and pull it gradually, but firmly, out of the skin. The bite site should be thoroughly disinfected with alcohol or another skin antiseptic solution. Avoid squeezing the tick during removal, because squeezing may inject infectious material into the skin *(option)*.  

➢ Use of gasoline, petroleum, and other organic solvents to suffocate ticks, as well as burning the tick with a match, should be avoided *(recommendation)*.  

➢ If a rash develops, the patient should see a physician in case antibiotics or vaccinations are indicated *(option)*.  

➢ Nil additional comment. |
| Drowning and scuba diving decompression illness | ➢ Airway management skills must be included in first aid training for drowning process rescue and resuscitation *(standard)***.  

➢ Drowning process resuscitation must have as the priority upper airway management and early rescue breathing *(standard)***.  

➢ In-water resuscitation consisting of airway and ventilation management is recommended under the following circumstances: shallow water, a | ➢ Nil additional comment. |
trained rescuer with a flotation aid in deep calm water, or two or more trained rescuers (recommendation**).

- In-water resuscitation consisting of airway and ventilation management should not be attempted in deep water by a single rescuer without flotation support. In this case, the priority should be rescue to shore (recommendation**).

- In-water ventilations may be delivered using a scuba regulator or modified demand valve for in-water usage (option*).

- Compressions should not be performed in water (standard***).

- Compressions may be performed on the way to shore if the victim can be placed on a solid object such as a rescue board (option*).

- For unconscious or recovering victims, or during transport of drowning victims, the victim may be in as near a true lateral position as possible, with the head dependent to allow free drainage of fluids (option*).

- Routine oropharyngeal suctioning should not be done in the drowning process resuscitation (recommendation**).
- In a submersion victim, suction and manual methods should be used when the oropharynx is blocked by vomitus or debris that is preventing ventilation (recommendation**).

- Supplemental oxygen for the drowning process resuscitation can be used, but doing so should not delay resuscitation, including opening the airway and providing ventilation and compressions as needed (option*).

<table>
<thead>
<tr>
<th>Cervical spine injury of drowning victims</th>
<th>If resuscitation is required and cannot be effectively provided in the water, drowning victims should be removed from the water and resuscitated by the fastest means available (recommendation**).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spinal motion restriction and immobilization during transport should be used only for victims whose injuries were incurred via a high-impact/high-risk activity (e.g., diving, water skiing, surfing, and being on beaches with moderate to severe shore breaks) and who have signs of unreliability (including intoxication) or injury (recommendation**).</td>
</tr>
<tr>
<td></td>
<td>If effective airway and ventilation cannot be provided in the water, even the victim with possible cervical spinal injury should be rapidly removed from the water (recommendation**).</td>
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</table>

- Nil additional comment.
- If the victim is at risk of cervical spinal injury, first aid providers should use manual spinal motion restriction during initial assessment, provided such restriction does not prevent establishing a patent airway and effective ventilation (recommendation**).

- First aid providers may use spinal immobilization if properly trained (option*).

**Scuba diving decompression illness**

- In cases of decompression illness (DCI), first aid providers should administer oxygen (if available), which may reduce the symptoms substantially (recommendation**).

- First aid providers should call for EMS immediately and indicate the likelihood of DCI so that transport of the victim to a decompression chamber can be arranged as soon as possible, because the only real treatment for DCI is recompression in a decompression chamber (recommendation**).

**Decompression illness (DCI)**

- In Hong Kong, all patients should be first sent to Accident and Emergency Department. The specialists will assess the patient and arrange the decompression therapy to the victims if needed.

**Decompression sickness (DCS) & Arterial gas embolism (AGE)**

- In Hong Kong, all decompression illness victims should be first sent to the Accident and Emergency Department. The specialists will assess the victims and arrange decompression therapy if needed.
<table>
<thead>
<tr>
<th>Resuscitation</th>
<th>Cardiac Arrest</th>
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<tbody>
<tr>
<td>For untrained or minimally trained first aid providers treating an adult victim, compression-only CPR should be used (<strong>recommendation</strong>).</td>
<td></td>
</tr>
<tr>
<td>For formally trained first aid providers (and professionals) treating an adult victim, compressions with breaths should be provided (<strong>recommendation</strong>).</td>
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</tr>
<tr>
<td>Every effort should be made to shorten the time until compressions and to minimize any interruptions in compressions (<strong>recommendation</strong>).</td>
<td></td>
</tr>
<tr>
<td>For formally trained first aid providers (and professionals) treating an adult victim who is unwilling or unable, or in another special circumstance, compression-only CPR may be substituted for compressions with breaths (<strong>option</strong>).</td>
<td></td>
</tr>
<tr>
<td>For infants and children with cardiac arrest, the preferred method of CPR is compressions with breaths (<strong>recommendation</strong>).</td>
<td></td>
</tr>
<tr>
<td>Professional rescuers in Hong Kong refer to health care providers such as doctors, nurses and paramedics.</td>
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</tbody>
</table>
For infants and children with cardiac arrest, and first aid providers unwilling, unable or untrained, compression-only CPR may be performed (recommendation**).

For infants, children and drowning victims who are unresponsive and not breathing, breaths should be given before compressions (recommendation**). Either two or five breaths may be given (option*).

Professional rescuers may be taught to do a pulse check, but this should not increase assessment time and is preferred to be done with the breathing check (option*).

Professional rescuers should check for pulse and if unsure as to whether the pulse is present, they should act as if the pulse is absent (recommendation**).

For adults, the compression rate may be at least 100 per minute and not exceed 120 compressions per minute (option*).

For adults, the depth of compression may be at least 2 inches (5-6 cm) (option*).
Cardiopulmonary Resuscitation (CPR): summary of new recommendation

<table>
<thead>
<tr>
<th>Topic</th>
<th>Guidelines</th>
<th>Hong Kong Red Cross Review Panel Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated External Defibrillation (AED)</td>
<td>➢ Standard AEDs must be used in adults and children &gt;8 years old <em>(standard</em>**).<em>&lt;br&gt;➢ For children between 1 and 8 years old, pediatric pads/adapter or a pediatric mode must be used if available <em>(standard</em>**); if these are not available, the AED should be used on children between 1 and 8 years old as it is <em>(recommendation</em></em>).*&lt;br&gt;➢ AEDs may be used for children &lt;1 year old <em>(option</em>).</td>
<td>➢ Nil additional comment.</td>
</tr>
<tr>
<td>Methods of Providing Ventilations</td>
<td>➢ A single rescuer providing ventilations should use the mouth-to-mask technique rather than the BVM technique <em>(recommendation</em>*).*</td>
<td>➢ Nil additional comment.</td>
</tr>
</tbody>
</table>
- Multiple rescuers with at least two available for providing ventilations should use the two-person BVM technique if properly trained and experienced in this method *(recommendation)**.

**Psychosocial Support/ Mental Health**

- The core principles of psychosocial support (as stated by the IFRC Reference Centre for Psychosocial support, the IASC guidelines as well as the *Psychological First Aid: Field Operations Guide*) recommend that PFA should be included in all first aid training programmes *(recommendation)**.

- Given the limited number of professional mental health workers in Hong Kong and limited access for comprehensive assessment in the frontline, referral for mental health service has to be considered if indicated by a screening conducted by experienced Psychological First Aid worker(s).

**De-escalating techniques for violent behavior**

- First aid providers should have basic skills in handling a person at risk of violent behaviour until help from a health care professional is available *(recommendation)**.

- Thorough and comprehensive assessment for violent risk and for the possibility of an underlying mental illness for violent risk should be done by trained health care professionals *(recommendation)**.

- If a person is considered to be at risk of engaging in violence, de-escalating techniques can be adopted by trained first aid providers as short-term measures in preventing a violent behaviour *(option*).
<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Panic attack</strong></td>
<td>A victim experiencing a panic attack should be assessed and treated by a mental health care provider (<strong>recommendation</strong>).</td>
</tr>
<tr>
<td></td>
<td>As it is difficult for first aid provider to differentiate heightened anxiety, panic attack and panic disorder, a victim experiencing features resembling panic attack should be assessed and treated by a health care provider first.</td>
</tr>
<tr>
<td><strong>Extreme stress and post-traumatic stress disorder</strong></td>
<td>For persons or groups that have experienced a traumatic event, psychosocial support provided by trained mental health providers is highly recommended within the first month after exposure to a traumatic event (<strong>recommendation</strong>).</td>
</tr>
<tr>
<td></td>
<td>First aid providers are not expected to make a diagnosis of PTSD. However, in case of particularly powerful or persistent stress reactions or symptoms, first aid providers should seek help from health care professionals, including a clinical psychologist or psychiatrist (<strong>recommendation</strong>).</td>
</tr>
<tr>
<td></td>
<td>According to the NICE Guidelines (2005), prevalence rate of PTSD after experiencing a traumatic event is 25-30%. While a wide range of acute stress reactions could be normal reactions in response to a traumatic event and the distress would normally subside when safety and security ensured, it is important to be aware that these reactions and symptoms might persist and cause significant impairment and distress for some of the victims. Information for normalizing transient distressful response consistent with reality and culture, as well as, information that facilitate help seeking for persisting and dysfunctional response are recommended.</td>
</tr>
<tr>
<td></td>
<td>Randomized controlled trials have consistently showed that single-session critical incident stress debriefing (CISD) which focuses on facilitating victims to revisit their feelings and thoughts about the events in groups shortly after the trauma <strong>does not</strong> reduce the risk of development of PTSD versus no intervention. Some studies have also showed that single-session CISD may lead to harmful effect as CISD attendees reported having spontaneous recovery to a less degree than non attendees. Thus, CISD is <strong>NOT</strong> recommended to be routinely used for victims of traumatic events.</td>
</tr>
<tr>
<td><strong>Suicidal ideation</strong></td>
<td>➢ If a person is considered to have suicidal ideation, he or she should be directly asked about suicidal thoughts by trained first aid providers. Inquiry about suicidal thoughts will not precipitate a suicide attempt. Instead, the person will feel being cared for if the inquiry is performed appropriately (recommendation**).</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>➢ In Hong Kong, the official validity period of Standard/ Basic First Aid Certificate is &quot;3 years&quot; as recognized by the Hong Kong Labour Department. Whereas, for Cardio-pulmonary resuscitation training programmes, training bodies may adopt shorter 2-year training refresh interval to reflect the importance of resuscitation skills.</td>
</tr>
<tr>
<td><strong>Effectiveness of non-resuscitative first aid training in laypersons</strong></td>
<td>➢ The following risk factors have to be included in consideration of suicidal risk: history of psychiatric illness and access to lethal weapons (e.g. guns).</td>
</tr>
<tr>
<td>➢ First aid educational programmes must include approaches to overcome barriers to action, including addressing self-efficacy and inhibitors of emergency helping behavior.</td>
<td>➢ A study has been conducted in HK during a 1 year period between 1/4/2007 – 31/3/2008 to receive the effectiveness of video self-learning (VSI) against traditional classroom instruction (TCI). The study showed no significant difference between the passing rates of the 2 groups (90% in VSI group and 95% of TCI group. P=0.18) in the initial assessment. However individual skill performance by TCI group tended to be better (P=0.01).</td>
</tr>
</tbody>
</table>

Acknowledgments

Special thanks to the following members for their support and contributions participating in the International Federation of Red Cross and Red Crescent Societies International First Aid and Resuscitation Guidelines 2011 Hong Kong Red Cross Review Panel:

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This “Guidelines Highlights” summarizes the key topics of The International First Aid and Resuscitation Guidelines 2011 (IFRC) and recommendations made by The 2011 Guideline Review Panel of Hong Kong Red Cross.

As this “Guidelines Highlights” is designed in a summary format, it can not exhaustively list out all the Guidelines contents. For more detailed information and references, please refer to the full version of The International Federation of Red Cross and Red Crescent Societies International First Aid and Resuscitation Guidelines 2011 at http://www.redcross.org.hk