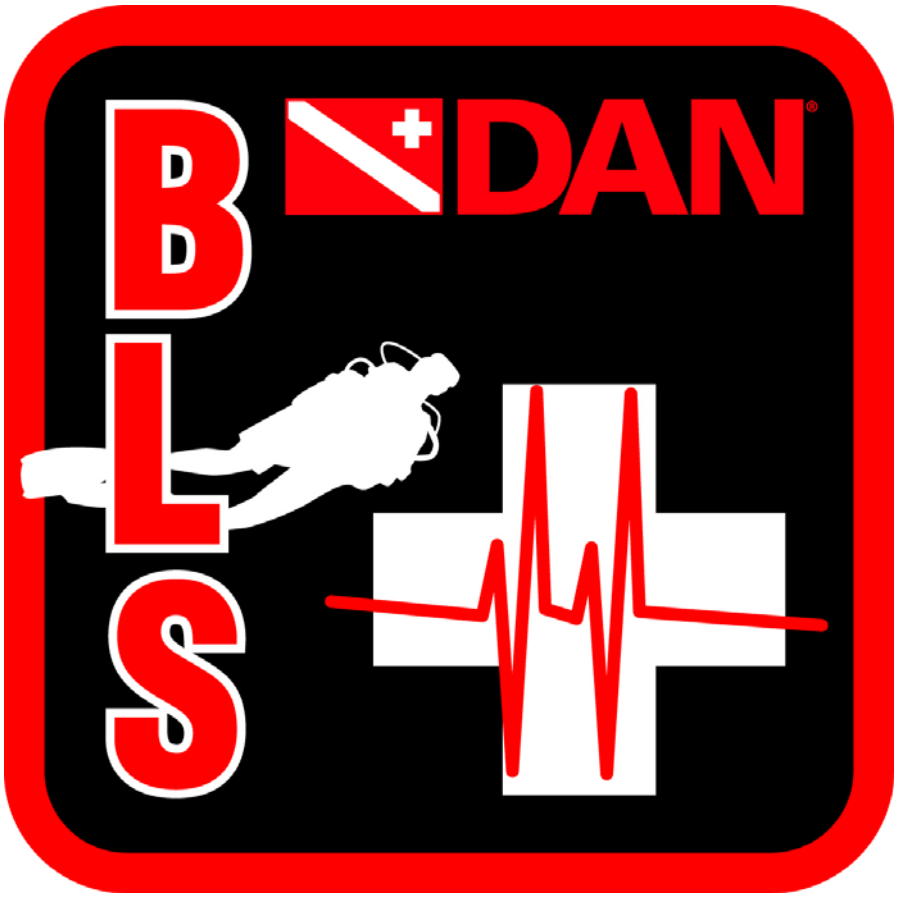
DAN SOUTHERN AFRICA



Basic Life Support Instructor Manual

DAN Basic Life Support Provider Course Standards and Procedures

General

The Basic Life Support course, represents entry-level training designed to educate persons in providing Basic Life Support techniques to adult victims with life threatening injuries, while activating the local medical services.

Course Objective

The DAN Basic Life Support provider ("DAN BLS Provider") programme is designed to teach the knowledge and skills needed to provide Basic Life Support (BLS) to adult victims.
BLS consists out of several First Aid techniques that support (or might restore) life. At the end of the course the DAN BLS provider will be able to recognise an emergency, activate the EMS and provide early BLS, while waiting for an AED or Advanced Life support to arrive at the scene of the accident. Early Access to the EMS and early BLS are 2 of the 4 links in the chain of survival.

Recommended Minimum Hours of Training

Knowledge development (lecture) hours = 1.5 – 2,5
Skills development (practice) hours = 2.5 – 3,5
This course should be taught as a four hour module (minimum) as outlined in this manual. The time needed to teach the course varies and depends on many factors including the number of students and their ability to process the educational components of the program. Instructors who want to include subjects or training beyond the course requirements may do so only before or following the course. Any additional training must not be required for completion of course requirements.

Required Curriculum Subject Areas

The instructor must ensure participants are able to:

Knowledge Development

- Understand basic Anatomy and Physiology.
- List the 4 links of the “chain of survival”
- Protect themselves against decease transmission and danger
- Check responsiveness
- Check for normal breathing
- Perform chest compressions and rescue breathing – CPR
- Place an unconscious injured person in the recovery position
- Provide care for choking
- Provide care for external bleeding
- Provide care for injured persons in shock

The instructor must ensure each course participant can successfully perform the following:

Skills Development

- Scene Safety Assessment
- Resuscitation
- Providing care with an AED (optional)
- Placing an unconscious breathing person in the recovery position
- Providing care for a person with a foreign body airway obstruction (chocking)
- Control of (severe) external breathing
- Shock management
- Combined skills (optional)
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Learning Objectives

At the end of this programme, DAN Basic Life Support, course participants will be able to:

1. Explain basic Anatomy and Physiology.
2. List the 4 links of the “chain of survival”
3. Explain why BLS is important
4. State the goal of BLS and resuscitation
5. Recognise danger and perform a Scene Safety Assessment
6. Protect themselves against cross infection
7. Describe the function of chest compressions and ventilations
8. Explain how to avoid Gastric distension
9. Check responsiveness
10. Reassure an injured person
11. Open the airway
12. Check for normal breathing
13. Activate the EMS
14. Perform chest compressions and rescue breathing – CPR
15. List the advantages of a face shield and resuscitation mask
16. Explain the advantage of oxygen during resuscitation
17. Explain the importance of defibrillation
18. State the most common cause of chocking
19. Describe the difference between mild and severe airway obstruction
20. Provide care for choking
21. Explain why an unconscious, breathing victim must be placed in the recovery position
22. Place an unconscious, breathing person in the recovery position
23. Describe the function of the blood
24. Provide care for (severe) external bleeding
25. Explain what is shock
26. Name at least 3 causes of shock
27. List at least 7 warning signs of shock
28. Provide care for injured persons in shock

Course participants must complete the DAN BLS examination with a minimum passing score of 80 percent. The instructor will review the examination with each participant to ensure 100 percent understanding of the material.

Skill Performance Objectives

To successfully complete the DAN BLS Provider course, participants must demonstrate skill and confidence in providing BLS:

- Scene Safety Assessment
- Resuscitation
- Providing care with an AED (optional)
- Placing an unconscious breathing person in the recovery position
- Providing care for a person with a foreign body airway obstruction (chocking)
- Control of (severe) external breathing
- Shock management
- Combined skills (optional)

DAN Support Materials for BLS Provider Courses

The DAN BLS Student Kit is required to fulfil training requirements. Each DAN BLS Provider must possess the Student Handbook. Only DAN Instructors may acquire DAN training and certification materials from DAN or its designated agent.

This audiovisual support material must be used during the knowledge development session of the DAN BLS Provider Course.

DAN BLS slide series (76 slides)

DAN BLS Provider Retraining Standards

General

This is a retraining programme for DAN BLS Providers who have previously attended a DAN BLS Course. This retraining programme is not designed to train new DAN BLS Providers.

Retraining Course Objective

The objective of this course is to refresh and update previously trained DAN BLS Providers in necessary knowledge and skills.

Qualifications Upon Completion

Since the first aid skills associated with providing Basic Life Support deteriorate at variable rates, DAN Training recommends retraining every two years (24 months).

Prerequisites for Entering the DAN BLS Provider Retraining Programme

The course participant must show proof of having successfully completed a previous BLS Course.

Recommended Hours of Training

Option 1
Participate in the 4-hour DAN BLS Provider Course
Option 2
Knowledge development time = 1 hour: View DAN's BLS slide series, review the DAN BLS Provider Workbook and pass a written evaluation.
Skills development session time = 1.5-2 hours

Required Curriculum Subject Areas

The DAN Instructor must ensure that the following subject areas have been reviewed with the course participant:

Knowledge Development

- Basic Anatomy and Physiology.
- The 4 links of the “chain of survival”
- Protection against decease transmission and danger
- Check responsiveness
- Check for normal breathing
- Perform chest compressions and rescue breathing – CPR
- Placing an unconscious injured person in the recovery position
- Provide care for choking
- Provide care for external bleeding
- Provide care for injured persons in shock

The instructor must ensure that the course participant is able to successfully demonstrate the ability to perform the following skills:

Skills Development

- Scene Safety Assessment
- Resuscitation
- Providing care with an AED (optional)
- Placing an unconscious breathing person in the recovery position
- Providing care for a person with a foreign body airway obstruction (chocking)
- Control of (severe) external breathing
- Shock management
- Combined skills (optional)

DAN Support Materials for All Retraining Courses

The DAN BLS Student Handbook and re-certification envelope is required to fulfil retraining requirements. Each DAN BLS Provider participating in retraining must have the most current edition of the Student Handbook. If the DAN BLS Provider participating in retraining owns the most recent edition of the Student Handbook, the DAN Instructor only need to purchase a re-certification envelope. DAN Training will issue a new provider card as soon as they received the provider course registration Form.
Only DAN Instructors may acquire DAN Training and certification materials from DAN or its designated agent.

Key Standards Overview

DAN BLS Provider Course

Prerequisites: None
Recommended Prerequisites: None
Student-to-Instructor Ratio: 12:1 during skills development sessions
Recommended course hours: Four (4) hours
Required student materials: DAN BLS Student Workbook
Required instructor materials: DAN Instructor Manual
Required audiovisual materials: DAN *Basic Life Support* slide series
Retraining period: 24 months

Knowledge Development Session Outline and Slide Script

Knowledge Development Session Outline

How to conduct the knowledge development session for the DAN BLS Provider course.

Before you start:

1. Provide each student with a copy of the DAN *BLS* Student Kit. Each student must have a copy of the handbook.
2. Instruct students to read the handbook and complete the review questions before coming to class.
3. Review the DAN BLS Provider Course Checklist. Make sure that you have all materials and equipment required to teach the program.

Knowledge Development Session Process:

1. Conduct introductions of the course staff and of the DAN BLS Provider Course.
2. Complete DAN BLS Provider Course administrative requirements (DAN Provider Registration Form, Statement of Understanding, Practical Evaluation Record and other training association administrative requirements).
3. Show the DAN BLS slides. Answer any student questions about the material.
4. Conduct the Skills Development Session emphasising key portions of the Knowledge Development Session.
5. The Providing Care with an AED skill is an Optional Skill. DAN Instructors should demonstrate this skill within the BLS course as a means to cross-promote the AED course.
6. Administer the DAN BLS Course Final Examination. Students must score at least 80 percent for successful completion of the course. To ensure 100 percent comprehension of the material, review any missed questions with the student.
7. Have students complete the DAN BLS Provider Course Evaluation and send them to DAN Training.
8. Sign DAN BLS successful completion cards and wall certificates for all successful course participants.
9. Congratulate and encourage all course participants to continue learning about dive safety and scuba diving.
10. Remind students that BLS Skills deteriorate at variable rates and retraining is recommended every two years or 24 months.

Basic Life Support Slide Script

Slide 1: Basic Life Support

Welcome to DAN Europe's BLS course. My name is _____ and I am a certified DAN BLS Instructor.

Slide 2: BLS Provider Registration

Please complete the following administrative paperwork.
DAN BLS Provider Registration Form
Statement of Understanding
DAN Membership Form (This is optional)
Other Administrative Procedures
Introductions
Instructor and Staff
DAN Provider Candidates
Since BLS skills deteriorate at variable rates, retraining is recommended every two years.
However, as a Good Samaritan, you must only provide your best rescue efforts in good faith, based on your level of training and experience.

Slide 3: Course objectives

During the DAN BLS Course, the following skills will be learned:

- Scene Safety Assessment
- Resuscitation
- Recovery Position
- Choking
- External Bleeding
- Shock management

Slide 4: Basic Life Support

Slide 5: What is BLS?

Basic First Aid techniques used to support (or restore) life

- Protect yourself
- Call EMS
- Provide care for life threatening injuries
- Establishing or maintaining the ABC's / performing CPR

Note: First aid might have a positive influence of the victim's recovery process.

To be able to provide care for life threatening injuries it is crucial to learn these basic First Aid techniques:

⇒ Scene Safety Assessment (and personal protection)
⇒ CPR (Cardio Pulmonary Resuscitation)
⇒ Recovery Position
⇒ Foreign-body Airway Obstruction / Choking
⇒ (Severe) External Bleeding
Shock Management

Slide 6: Why BLS

Our body needs a constant supply of oxygen

Without oxygen supply organs will deteriorate and die.

- BLS / CPR makes sure:
  - The airways are open
  - Chest compressions provide a temporary heart function
  - Rescue breaths deliver air (oxygen) to the lungs.
  - Help is on the way
  - Time is an important factor

Slide 7: Clock is ticking…..

After only few minutes brain damage will occur.

CPR avoids damage to vital organs by circulating oxygenated blood.

In most cases CPR will not make the heart beat again.

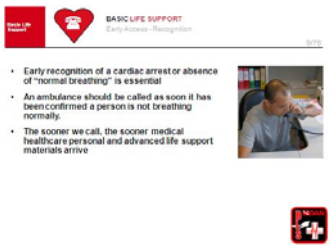
Advanced Life Support (ambulance) should be called as soon as possible to increase chance of survival

AED's or defibrillators may re-start the heart

Slide 8: Chain of Survival

4 steps that positively influence the chance of survival

- Early Access to EMS
- Early BLS
- Early defibrillation
- Early Advanced Life Support



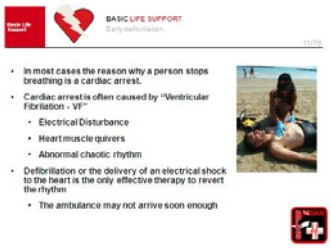
Slide 9: Early access to EMS - Recognition

- Early recognition of a cardiac arrest or absence of "normal breathing" is essential
- An ambulance should be called as soon it has been confirmed a person is not breathing normally.
- The sooner we call, the sooner medical healthcare personal and advanced life support materials arrive

Slide 10: Early BLS

- Early BLS significantly improves the chance of survival.
- Maintains circulation and delivery of oxygen to the organs

Note: After the DAN BLS course, students will be able to guarantee that the first 2 links of the chain of survival are present.



Slide 11: Early defibrillation

- In most cases the reason why a person stops breathing is a cardiac arrest.
- Cardiac arrest is often caused by “Ventricular Fibrilation - VF”
  - Electrical Disturbance
  - Heart muscle quivers
  - Abnormal chaotic rhythm
- Defibrillation or the delivery of an electrical shock to the heart is the only effective therapy to revert the rhythm
  - The ambulance may not arrive soon enough

Note: When the heart is in VF, CPR would not restart the heart. While CPR would delay (brain or other) damage because of the lack oxygen, only a defibrillator could be able to revert the rhythm and make the heart beating again.

Slide 12: Early Advanced Life Support

- BLS and defibrillation might not restart the heart
- Medical interventions (like advanced airway management) or the delivery of medication increases success of resuscitation
- Advanced Life Support will not arrive unless the ambulance is called

Slide 13: Emotional Stress

- Anxiety
  - o Fear of being imperfect or doing the wrong thing
  - o Fear of being sued
  - o Fear of infection
- Making it worse
  - o A small mistake while providing care is much better than no mistake, but not providing care at all
- Unsuccesful rescues
  - o It is behind any rescuer's control to bring back life
  - o A person with no signs of life is in the worse possible condition and the rescuer can not make it worse.

Notes:

Helping others in need gives you a good feeling, but it might also create emotional stress before, during and after the rescue.

⇒ Anxiety is normal when providing first aid. It is OK not to provide "perfect" care. A small mistake will rarely result in an injury or getting the victim into a worse condition.

⇒ To avoid legal problems it is recommended to ask an injured person for his permission before you provide first aid. This can be done by saying: "My name is …… and I am a First Aid Provider. Can I help you?" If the victim is responsive, he should give permission before care is provided. When not asking this permission or forcing care against his will, the victim might take legal action for involuntary assistance or assault. Should the victim be unresponsive the law assumes that permission is given.

⇒ By using personal protection barriers, the chance of infection will be minimal. This is discussed on the next slides

Keep in mind that if rescuer would not react the victim's condition will surely stay the same or get worse. A person with a circulatory arrest (no signs of breathing) is in the worse possible condition. When providing CPR you can impossibly make that condition worse. The fear of causing harm is thus irrelevant and overestimated.

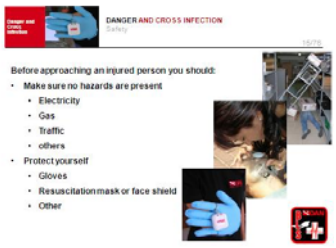
After being certified as DAN BLS provider you can be confident you are able to provide BLS in a good and effective way and when you step forward to provide care you will be surprised how clearly the needed first aid skills will come back

in your mind. To keep this level of competence it is required to refresh your knowledge at least once every 2 years, by following a BLS refresher course.

An unsuccessful rescue means that a dead (no signs of life) person stayed in that condition and not that the rescuer did something wrong, with dead as the result. It is behind any rescuer's control to bring back life.

Telling that CPR saves lives or that when CPR is performed correctly you will save a life, actually gives a wrong impression and is not entirely true. This will only make a rescuer feel worse after an unsuccessful rescue. Remember that in most cases the heart does not restart when performing CPR, even if performed perfectly. CPR increases the chances of survival, but does not guarantee it. CPR, as part of "early BLS" is only one link in the chain of survival

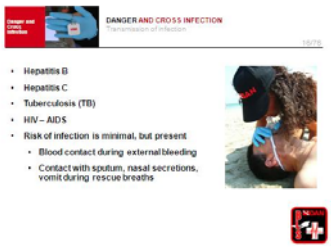
Slide 14: Danger and cross infection



Slide 15: Safety

- Before approaching an injured person you should:
  - Make sure no hazards are present:
    - Electricity
    - Gas
    - Traffic
    - others
  - Protect yourself
    - Gloves
    - Resuscitation mask or face shield
    - Other

Note: A rescuer would not be able to provide first aid if he is injured himself. Rescuer's safety therefore comes first. Before providing BLS it is important to assess the scene of the accident and to eliminate or remove any danger that might be present. Also important is to protect yourself against infection.



Slide 16: Transmission of Infection

- Hepatitis B
- Hepatitis C
- TB
- HIV – AIDS
- Risk of infection is minimal, but present
  - Blood contact during external bleeding
  - Contact with sputum, nasal secretions, vomit during rescue breaths

Slide 17: Minimising the risk

- Avoid contact with blood and other body fluids
- Use protective devices
- Gloves
- Resuscitation barriers like "face shield" or resuscitation mask
- Eye protection
- Wash hands thoroughly after providing first aid
- Clean and sterilise non disposable first aid equipment like masks after use
- Throw away all disposable first aid materials

Slide 18: Gloves

- Check before use
- Avoid contact with blood when taking them off

Note: Before putting on gloves, blow air in them and close the opening of the glove (pulse) making a balloon of them.
Check if the glove remains full of air to make sure the glove is intact and can be used without fear of direct contact with blood or body fluids.
Note: Show students how to remove gloves (see student manual)

Slide 19: Resuscitation mask

- Advantages:
  - o Reduced risk of infection transmission
  - o Allows ventilations through nose as well as mouth
  - o Allows air to be enriched with additional oxygen

Note: Also introduce the face shield.

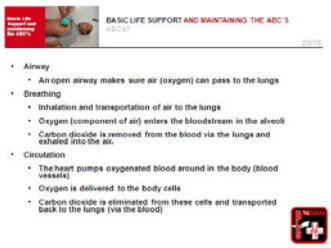
Slide 20: Skill Development Session

Slide 21: Scene Safety Assessment

- S - Stop
- A - Assess scene
- F - Find and secure first aid kit, oxygen and AED units
- E - Exposure protection

Note: Have students practise the Scene Safety Assessment, including the use of gloves

Slide 22: Basic Life Support and maintaining the ABC's



Slide 23: ABC's?

Airway

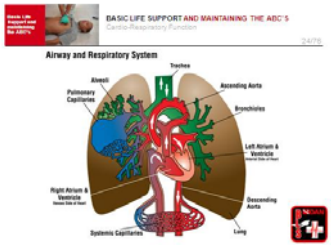
- An open airway makes sure air (oxygen) can pass to the lungs

Breathing

- Inhalation and transportation of air to the Oxygen (component of air) enters the bloodstream in the Alveoli.
- Carbon dioxide is removed from the blood via the lungs and exhaled into the air.

Circulation

- The heart pumps oxygenated blood around in the body (bloodvessels)
- Oxygen is delivered to the body cells
- Carbon dioxide is eliminated from these cells and transported back to the lungs (via the blood)



Slide 24: Cardio – Pulmonary function

Note:

Each time we inhale (breathe in), air goes into our nose or mouth, then through the larynx, down the trachea or windpipe.
The windpipe divides itself into a left and right bronchi and air enters via these bronchi in respectively, the left or right lung. These bronchi are like branches, dividing themselves into smaller branches or bronchioles. At the end of the bronchioles the air arrives in small air sacs. These tiny sacs are called alveoli.

Oxygen (from the air) goes from the alveoli through these thin walls to the capillaries. This process is called diffusion.
In these capillaries we also find carbon dioxide (CO_2). This is the waste product of the body's metabolism (used oxygen returns to the lungs under the form of CO_2).
This Carbon dioxide diffuses from the capillaries back to the alveoli.
The diffusion of oxygen to the blood is only possible when the concentration of oxygen in the lungs is higher than the concentration of oxygen in the capillaries.

By breathing in we make sure the oxygen concentration in the lungs remains higher.

When we exhale (breathe out), the air (with an increased CO2 concentration) goes out of the lungs and is transported via the bronchi and windpipe to the mouth or nose where it leaves the body.

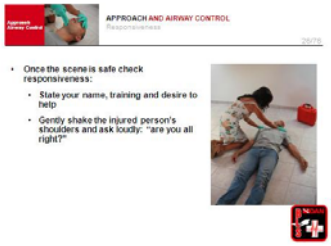
The heart pumps the oxygenated blood (from capillaries) around and transports it to all parts in the body.

This is done by the pulmonary (to and from the lungs) and systemic (rest of the body) circulation.

De-oxygenated blood returning form the systemic circulation (containing CO2) enters the right atrium, goes to the right ventricle and is pumped to the lungs for gas exchange in the alveoli (pulmonary circulation).
Blood that returns from the lungs enter in the left atrium, is transported to the left ventricle and from there it is pumped to the rest of the body (via the systemic circulation).

This blood will carry the oxygen to the body cells until it arrives back to the right atrium.

Slide 25: A: Approach – Airway Control



Slide 26: Responsiveness

- Once the scene is safe check responsiveness:
- State your name, training and desire to help.
- Gently shake the injured person's shoulders and ask loudly: "are you all right?"

Slide 27: Responsive

If responsive:

- Leave him in the position in which you find him provided there is no further danger
- Try to find out what is wrong with him and get help if needed
- Reassess him regularly

Slide 28: Unresponsive

- If he/she does not respond:
- Shout for help.
- Ask a bystander to wait
- If alone, shout loudly and attract attention
- Turn the injured person on his back and then open the airway

Slide 29: Opening Airway

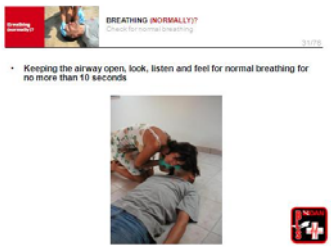
Head tilt and Chin lift

Note:

⇒ Place your hand on his forehead and gently tilt his head back keeping your thumb and index finger free to close his nose if rescue breathing is required.

⇒ With your fingertips under the point of the injured person's chin, lift the chin to open the airway

Slide 30: B – Breathing normally?



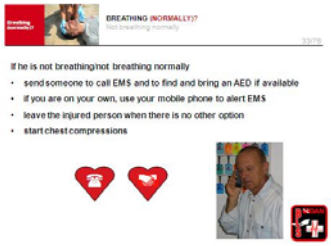
Slide 31: Check for normal breathing

- Keeping the airway open, look, listen and feel for normal breathing for no more than 10 seconds

Slide 32: Normal breathing

If he is breathing normally:

- Turn him into the recovery position
- Send or go for help / call an ambulance
- Continue to assess that breathing remains normal



Slide 33: Not breathing normally

- If he is not breathing normally send someone for help and to find and bring an AED if available
- If you are on your own, use your mobile phone to alert EMS
- Leave the injured person when there is no other option
- Start chest compressions**.**

Slide 34: C – Circulation, Chest Compressions, CPR

Slide 35: Chest Compressions

Note:

⇒ Kneel by the side of the injured person
⇒ Place one heel of one hand in the centre of the chest
⇒ Place the heel of your other hand on top of the first hand
⇒ Interlock the fingers of your hands and ensure that pressure is not applied over the injured person's ribs. Do not apply pressure over the upper abdomen or the bottom end of the bony sternum (breastbone).

Note:

With every compression, blood is pushed out of the left side of the heart, from where it goes throughout the body. At the same time, deoxygenated blood is squeezed from the right side of the heart to the lungs, where it will take oxygen from the alveoli. When releasing the pressure on the chest, blood flows back into the right side of the heart and oxygenated blood returns from the lungs to the left side of the heart.

Slide 36: Chest Compressions

- Depth and rate:
- At least 5cm (but not exceeding 6cm)
- 30 compressions
- After each compression, release all pressure on the chest
- Rate of at least 100/minute (not exceeding 120) a little less than 2 compressions every second 30 compressions in 18 seconds

Note: After each compression, release all the pressure on the chest without loosing contact between your hands and the sternum

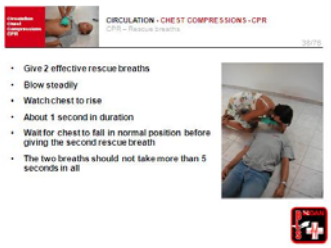
Note: When compressing too fast, the heart would not get the time to fill with blood and the compressions would therefore not move enough blood around, thus being ineffective. When compressing too slow, the blood would move too slow and the blood pressure would stay too low, avoiding an effective circulation as well.
When compressions are not deep enough, the amount of blood pushed out of the heart would be minimal and inadequate to support circulation.

Slide 37: CPR- Rescue breaths

- Open Airway
- Close nose
- Place lips around mouth

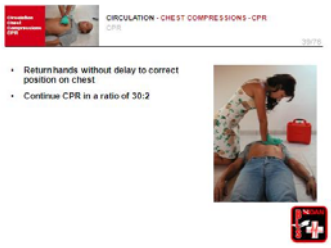
Note:

⇒ After 30 compressions open the airway again using the head tilt and chin lift
⇒ Pinch the soft part of the nose closed, using the index finger and thumb of your hand of the forehead.
⇒ Allow the mouth to open, but maintain chin lift
⇒ Take a normal breath and place your lips around his mouth, making sure that you have a good seal.



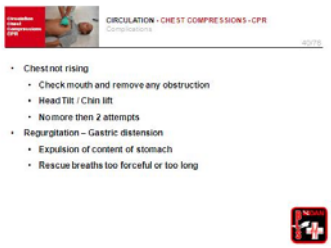
Slide 38: CPR- Rescue breaths

- Give 2 effective rescue breaths
- Blow steadily
- Watch chest to rise
- About 1 second in duration
- Wait for chest to fall in normal position before giving the second rescue breath.
- The two rescue breaths should not take more than 5 seconds in all.



Slide 39: CPR

- Return hands without delay to correct position on chest
- Continue CPR in a ratio of 30:2



Slide 40: Complications

Chest not rising

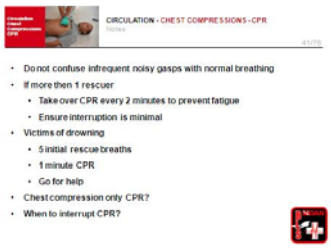
- Check and remove any obstruction
- Head Tilt / Chin lift
- No more then 2 attempts
- Regurgitation – Gastric distension
- Expulsion of content of stomach
- Rescue breaths to forceful or to long

Note: After Do not attempt more than 2 breaths each time before returning to chest compressions

Note: Regurgitation is very similar to vomiting. During vomiting the content of the stomach is forced out of the stomach by muscle contraction. In the case of gastric distension, there is no muscle activity, but the increased pressure inside the stomach will push out its content. The content will flow out (not spurting or forceful as in vomiting) of the stomach into the mouth
If regurgitation happens, the reaction of the rescuer should be to turn the victim on his side and clean the airways.

In order to avoid gastric distension you should:

⇒ Give rescue breaths of about 1 second in duration with enough volume to make the victim's chest rise
⇒ Avoid rapid or forceful rescue breaths
⇒ Open the airway completely
⇒ Allow the chest to fall back in the normal position before giving the second rescue breath
⇒ Avoid putting pressure on the stomach
⇒ Watch the stomach for signs of overexpansion



Slide 41: Notes

- Do not confuse infrequent noisy gasps with normal breathing
- If more then 1 rescuer
- Take over CPR every 2 minutes to prevent fatigue
- Victims of drowning
- 5 initial rescue breaths
- 1 minute CPR
- Go for help
- Chest compression only CPR?
- When to interrupt CPR?

Note:

The most common reason why a victim is not breathing is a Sudden Cardiac Arrest (SCA). The heart stopped beating unexpected and there still is a relatively high amount of oxygen present in the blood vessels, heart and brain. Ventilation is therefore initially less important then chest compressions.

In the case of asphyxial cardiac arrest (suffocation) the level of oxygen in the body is drastically reduced (hypoxia), making ventilations more important. For this reason the BLS protocol in case of drowning is slightly different

Slide 42: Mouth to mask resuscitation

Hand placement during resuscitation

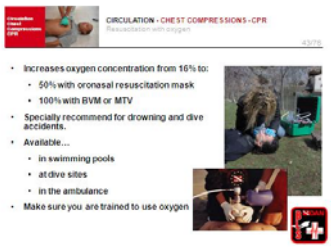
Note:

⇒ Apply the mask to the victim's face, using the bridge of the nose as a guide for correct position.

⇒ Seal the mask by placing your index finger and thumb of the hand closer to the top of the victim's head along the border of the mask and placing the thumb (also possible to use thumb and index finger) of your other hand along the lower margin of the mask.

⇒ Place your remaining fingers on the hand closer to the injured person's feet along the bony margin of the jaw and lift the jaw while performing a head tilt-chin lift.

⇒ Compress firmly and completely around the outside margin of the mask to provide a tight seal.
⇒ Provide slow effective rescue breaths while observing for chest rise.



Slide 43: Resuscitation with Oxygen

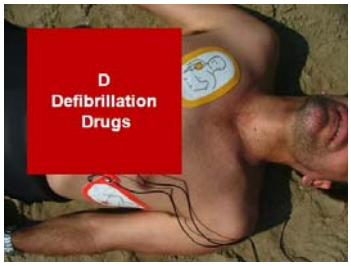
Increases oxygen concentration from 16% to:

- 50% with oronasal resuscitation mask
- 100% with BVM or MTV
- Specially recommend for drowning and dive accidents.
- Available…
- in swimming pools
- at dive sites
- in the ambulance
- Make sure you are trained to use oxygen

Notes:

When providing rescue breaths, the exhaled air from the rescuer's (16% of oxygen) goes to the lungs of the victim.
If the oxygen concentration in the lungs (alveoli) is high enough, the oxygen will diffuse to the capillaries and the blood becomes oxygenated.
Obviously, during this process and because the victim is not breathing, the oxygen concentration in the lungs is getting lower. Should the concentration become too low, diffusion would stop.
To avoid this we need to give new ventilations. However, in normal conditions breathing is about 12-20 times a minute (depending from age and activity) and during resuscitation it drops to about 5 a minute.

The lower amount of oxygen in the inspired air (16% instead of 21%) and the low amount of ventilations are keeping the oxygen concentration in the lungs relatively low. By increasing the oxygen concentration during ventilations, more oxygen would diffuse to the capillaries and oxygenation would be better. Oxygen concentration can be increased by using supplemental oxygen.

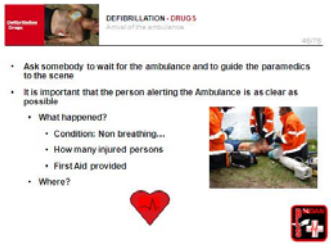


Slide 44: D – Defibrillation, Drugs

Slide 45: Use of an AED

The use of an AED drastically improves the chance of survival for victims of a Sudden Cardiac Arrest

- If available, ask for an AED as soon it is confirmed the injured person is not breathing.
- It is important to deliver a shock as soon as possible
- Make sure you are trained in the use of AED's



Slide 46: Arrival of the ambulance

Ask somebody to wait for the ambulance and to guide the paramedics to the scene

It is important that the person alerting the Ambulance is as clear as possible

- What happened?
- Condition: Non breathing…
- How many injured persons
- First Aid provided
- Where?

Slide 47: Skill Development Session

Slide 48: Initial Assessment with BLS – Adult

Remember SAFE

- Unresponsive?
- Shout for help
- Open airway

Not breathing normally?

- Activate EMS
- 30 chest compressions
- 2 rescue breaths / 30 compressions

Slide 49 : Providing care with an AED (optional)

Unresponsive
- Shout for help

Not breathing normally?
- Send or go for AED
- Call EMS
- CPR 30:2 until AED is attached

Attach the defibrillator pads

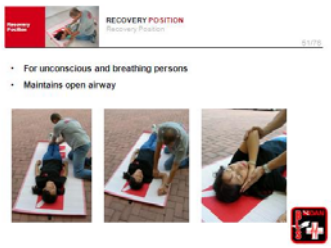
Allow the AED to analyze heart rhythm
- Don't touch the patient

If shock required: Unresponsive
- Attach the defibrillator pads
- Allow the AED to analyze heart rhythm

If shock required
- Follow the AED unit's prompts
- Visually and physically clear the patient
- Say “Clear”
- Administer shock.
- Resume CPR 30:2 for 2 minutes

If no shock required
- resume CPR 30:2 until the victim starts to breath normally
- Continue as directed by the voice/visual prompts

Slide 50 : Recovery Position



Slide 51: Recovery Position

- For unconscious and breathing persons
- Maintains open airway

Notes: Placing an unconscious, breathing person in the recovery position is important to maintain an open airway and to prevent blood and vomit obstructing the airway (or flowing into the lungs).

⇒ Remove spectacles
⇒ Kneel beside the injured person and make sure that both his legs are straight
⇒ Place the arm nearest to you at right angles to the body, elbow bent with the hand palm uppermost

Slide 52: Recovery Position

Notes:

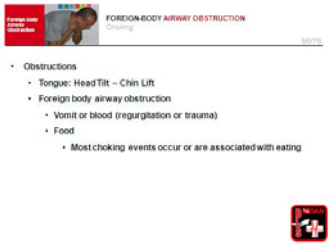
⇒ Bring the far arm across the chest and hold the back of the hand against the injured person's cheek nearest to you
⇒ With your other hand, grasp the far leg just above the knee and pull it up, keeping the foot on the ground.
⇒ Keeping the hand pressed against the cheek, pull the far leg to roll the injured person towards you onto his side.
⇒ Adjust the upper leg so that both the hip and knee are bent at right angles.
⇒ Tilt the head back to make sure the airway remains open
⇒ Adjust the hand under the cheek, if necessary, to keep the head tilted.
⇒ Check breathing regularly

Slide 53: Skill Development Session

Slide 54: Recovery Position

- Kneel at waist
- Straighten body
- Nearest arm at right angles to his body
  - Palm upwards
- Far arm across chest
  - Hold back of his hand against cheek
- Grasp far leg above knee and pull leg forward
  - Keep his foot on the ground
  - Person rolls towards rescuer
- Stabilize person
  - Leg – Head - Hand

Slide 55: Foreign – Body – Airway - Obstruction

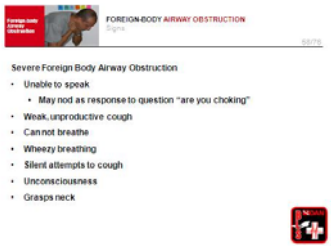


Slide 56: Choking

- Obstructions
  - Tongue: Head Tilt – Chin Lift
  - Foreign body airway obstruction
    - Vomit or blood (regurgitation or trauma)
    - Food
      - Most choking events occur or are associated with eating

Slide 57: Signs

- Mild Foreign Body Airway Obstruction
  - Able to speak
  - Cough
  - Breathe
  - Grasps neck

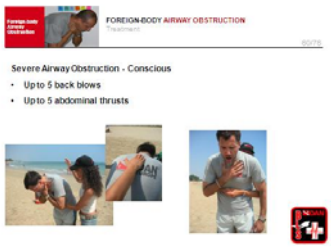


Slide 58 : Signs

- Severe Foreign Body Airway Obstruction
  - Unable to speak
  - May nod as response to question "are you choking"
  - Weak, unproductive cough
  - Can not breathe
  - Wheezy breathing
  - Silent attempts to cough
  - Unconsciousness
  - Grasps neck

Slide 59 : Treatment

- Mild Airway Obstruction
  - Encourage continued coughing
- Severe Airway Obstruction - Unconscious
  - Start CPR



Slide 60 : Treatment

- Severe Airway Obstruction - Conscious
  - Up to 5 back blows
  - Up to 5 abdominal thrusts

Notes:

Back blows:

⇒ Stand to the side and slightly behind the victim

⇒ Support chest with one hand and lean the victim well forwards so that when the obstructing object is dislodged, it comes out of the mouth rather than goes further down the airway.

⇒ Give up to 5 sharp blows between his shoulder blades with the heel of your other hand

⇒ Check to see if each back blow has relieved the obstruction. The aim should be to relieve the obstruction with each slap rather than necessarily to give all five.

If back slapping fails, give up to 5 abdominal thrusts:

⇒ Stand behind person and put both arms round the upper part of his abdomen.

⇒ Lean the victim forwards so that when the obstructing object is dislodged, it comes out of the mouth.

⇒ Clench your fist and place it between the navel and bottom tip of the sternum.

⇒ Grasp it with your other hand and pull sharply inwards and upwards; the obstructing object should be dislodged.

⇒ Repeat up to 5 times

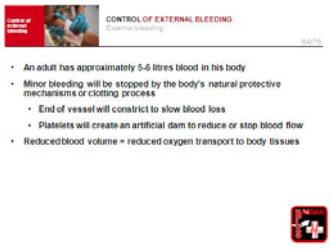
If the obstruction is still not relieved, continue alternating five back blows with five abdominal thrusts.

Slide 61 : Skills Development Session

Slide 62: Choking

- Mild airway obstruction
  - Encourage to cough
- Severe airway obstruction
  - Unconscious
    - Start CPR
  - Conscious
    - 5 back blows
    - If back blows fail, give 5 abdominal thrusts

Slide 63 : Control of external bleeding

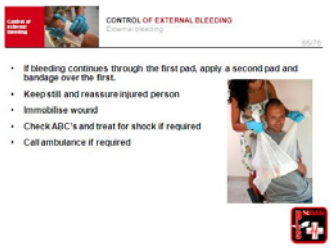


Slide 64: External bleeding

- An adult has approximately 5-6 litres blood in his body
- Minor bleeding will be stopped by the body's natural protective mechanisms or clotting process
  - End of vessel will constrict to slow blood loss
  - Platelets will create an artificial dam to reduce or stop blood flow
- Reduced blood volume = reduced oxygen transport to body tissues

Slide 65 : External bleeding

- Large or severe bleeding requires first aid
  - Apply direct pressure using sterile pad
  - Elevate extremity to slow blood flow
  - Secure pad with a dressing/bandage



Slide 66: External bleeding

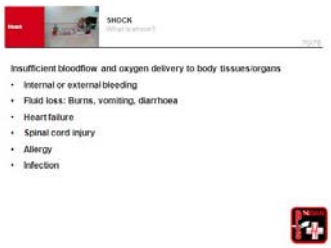
- If bleeding continues through the first pad, apply a second pad and bandage over the first.
- Keep still and reassure injured person
- Immobilise wound
- Check ABC's and treat for shock if required
- Call ambulance if required

Slide 67: Skills Development Session

Slide 68: External bleeding

- Remember S-A-F-E
- Use barrier devices
- Apply direct pressure
- Use sterile pad
- Elevate the wound
- Bandage the wound
- If necessary, use pressure points

Slide 69: Shock



Slide 70: What is Shock?

- Insufficient blood flow and oxygen delivery to body tissues/organs
  - Internal or external bleeding
  - Fluid loss: Burns, vomiting, diarrhoea
  - Heart failure
  - Spinal cord injury
  - Allergy
  - Infection

Note:

Due to a low blood pressure or a low volume of circulating fluids, caused by for example a bad heart function or severe blood loss, there will be an inadequate blood (and oxygen) supply to body cells.
As a reaction, the body will try to supply the brain (which is very sensitive to a reduced oxygen supply) with enough oxygen by reducing the oxygen supply to for example muscle tissues, limbs and skin (less sensitive to a reduced oxygen supply)
This will result however in other (vital) organs or cells receiving also less oxygen, even if they are sensitive to the lack of oxygen themselves (like kidneys, which are vulnerable to damage from low blood pressure).

Slide 71: Sign and Symptoms

- Anxiety
- Restlessness
- Rapid, shallow breathing
- Rapid, weak pulse
- Clammy, cool skin
- Pale or bluish colour
- Shivering
- Thirst
- Dizziness, nausea, vomiting
- Low blood pressare

Slide 72: Management of shock

- Maintain ABC's
- Activate EMS
- Control external bleeding
- Have person lie down, elevate legs (20- 25cm) if appropriate
- Provide oxygen
- Maintain normal body temperature

Note: Do not force a person (Especially with a heart or breathing problem) to lie down. Place him in the most comfortable position.

Slide 73: Management of shock

- Do not give food or drinks to a person in shock

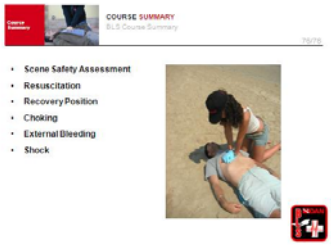
Note: Although a person in shock might be extremely thirsty, no fluids should be orally given during first aid. The reason is that the victim is assumed not entirely conscious and giving him to drink might lead to aspiration and choking.
In profound shock, water absorption may be impaired, and that may be another compounding factor, although water is mostly not considered dangerous, but probably simply useless.
Giving something to drink might also increase the likelihood of vomiting, making dehydration (or fluid loss) even worse.

Note: Due to shock, the stomach will not be functioning anymore. This because the body stopped the oxygen supply to that organ in order to increase oxygen delivery to brain, lungs and heart. Therefore the rescuer should not give food or drinks.

Slide 74: Skills Development Session

Slide 75: Shock

- Maintain ABCs
- Activate EMS
- Control external bleeding Place injured person on the ground
- Elevate legs
- Provide supplemental oxygen
- Maintain normal temperature



Slide 76: BLS Course Summary

- Scene Safety Assessment
- Resuscitation
- Recovery Position
- Choking
- External Bleeding
- Shock

Skills Development Session Overview

How to conduct the skills development session for the DAN BLS Provider course.

Pre-course Preparation:

1. Review the DAN BLS Provider Course Checklist. Make sure that you have all materials and equipment required to teach the program.

2. Review Ratios:
   - Maximum student-to-Instructor ratio is 12:1. Additional students may be added with the use of certified assistant to a maximum of 21 students.
   - Recommended student-to-CPR manikin ratio is 6:1.
   - Recommended student-to-oxygen resuscitation training unit ratio is 3:1.
   - Recommended student-to-AED unit is 3:1.

3. CPR manikin with a complete chest

4. Barrier devices, such as resuscitation mask or face shield

5. Medical gloves

6. First Aid supplies: Each group of 3 should have a complete set of first aid materials, including:
   - Gauzes
   - Dressings and/or Bandages
   - Closure strips or tape
   - Triangular bandage
   - Thermal blanket

7. Optional Oxygen equipment: Each DAN Oxygen Unit must include:
   - Multifunction regulator
   - Demand valve with hose
   - Oronasal resuscitation mask with supplemental oxygen inlet
   - Non Rebreather mask
   - Oxygen cylinder filled with medical- or higher-grade oxygen

8. Prepare two wash basins to clean masks between student use. The first basin should be a cleansing solution and a second basin with water. Have paper towels or other drying devices available. Disinfect materials after its use

9. Optional AED Exercise equipment
   - Must be a training version of an automatic or semi-automatic external defibrillator approved for use by the local authority in the country where the program is being taught.

Between the knowledge development session and skills development session:

1. Instruct the students to thoroughly wash their hands.
2. Clear an area of the classroom where students can be comfortable during the skills development session.
3. Post "No Smoking" and "Oxygen In Use" signs in the area of the classroom if oxygen is used.

Note: Any local Laws or regulations must be followed

Skills Development Session Process:

1. Introduce the skill and explain its importance and value (when and why the skill might be needed). Instruct the students to turn to the appropriate page of Student Handbook as a reference during the skills development session.
2. Demonstrate the skill in "real time" without elaboration or explanation. Students are expected to reproduce the critical steps of this demonstration.
3. Demonstrate the skill slowly while explaining and elaborating the critical steps to performing the skill.
4. Answer any student questions regarding the performance of the skill.
5. Separate class into groups of three students each (Rescuer, Injured person and Observer / Coach).
6. Provide a scenario where the Rescuer will learn and apply the appropriate skills.
7. Recognise reasonable performance of skills and remediate and counsel rescuers to improve performance as necessary.
8. Debrief the skill and offer suggestions for improvement, identify areas of weakness and reinforce the rescuer's ability to assist an injured person. Answer student questions.

Note: The Providing Care with an AED skill is an Optional Skill. DAN Instructors should demonstrate this skill within the BLS course as a means to cross-promote the AED course.

Skills Development Session Overview

1.	Scene Safety Assessment	Rescuer 1	Rescuer 2	Rescuer 3
2.	CPR - Resuscitation	Rescuer 1	Rescuer 2	Rescuer 3
3.	AED (Optional)	Instructor Demonstration Only Recommended		
4.	Recovery Position	Rescuer 1	Rescuer 2	Rescuer 3
5.	Airway Obstruction	Rescuer 1	Rescuer 2	Rescuer 3
6.	External Bleeding	Rescuer 1	Rescuer 2	Rescuer 3
7.	Shock Management	Rescuer 1	Rescuer 2	Rescuer 3
8.	Combined Scenario’s (optional)	Rescuer 1	Rescuer 2	Rescuer 3

Skill: Scene Safety Assessment

Objective: The student will be able to:

1. Perform a scene safety assessment.
2. List the steps in performing a scene safety assessment.
3. Use appropriate first aid barrier device in a scenario.
4. Demonstrate a caring attitude towards a person who becomes ill or injured.

Motivation: Protecting yourself is always your first responsibility. You can't help anyone else if you are **injured. You should decide if the scene is safe for you to enter and determine if there are any threats that may cause an injury/illness to you, bystanders, or the injured person while preparing yourself to lend assistance.**

Required Equipment:

1. Latex or non-latex medical gloves
2. Oronasal resuscitation mask with supplemental oxygen inlet

Recommended Equipment:

1. DAN First Aid Kit
2. Plastic resealable bag for barrier device disposal
3. Face shields / safety glasses
4. Other barrier devices as necessary

Instructor Role	Students' Role
1. Introduce skill. 2. Demonstrate skill in "real time." 3. Explain and demonstrate skill. Safety 4. Form groups of three. 5. Read skill scenario. 6. Oversee student practice. 7. Praise student progress. 8. Debrief and remediate as necessary.	1. Observe Instructor demonstration. 2. Ask questions. 3. Each student must practice Scene Assessment. 4. Support other students in learning. 5. Seek Instructor assistance if difficulties are experienced.

Scenario: You enter in a room and there is a person lying on the floor. The person lies in water and is holding an electrical device, which is attached to a wall socket What should you do first?

Student: After assessing the scene and looking for dangers, the student should locate the first aid materials and take the barrier devices present in the first aid kit

Instructor: Introduce barrier devices like face shield and gloves. Have students practising putting on and removing gloves

Scene Safety Assessment

Follow these simple steps to perform a Scene Safety Assessment.

Remember S-A-F-E

1. S - Stop
- Stop.
- Think.
- Act.

2. A - Assess Scene
- Is the scene safe?
- Is it safe to approach the injured person?
- Any other hazards present?
- Is there anything else which might be a risk for the rescuer

3. F - Find and Secure Oxygen, First Aid Kit and AED unit
- First aid kits contain critical supplies such as barriers.

4. E - Exposure Protection:
- Use barriers such as gloves and mouth-to-mask barrier devices.

⇒ Putting on gloves: Inspect gloves for damage

⇒ Removing gloves:
- Take the first glove at the outside at the wrist and pull the glove towards the fingers of that hand and turn it inside out.
- Use the protected hand to make a ball of the glove you removed.
- Go with an “unprotected” finger inside the second glove and pull the glove towards the fingers as done before, keeping the first glove inside the second one.
- Place the gloves in an “hazardous waste” bag

Skill: Resuscitation - CPR

Objective: The student will be able to:

1. Check if the injured person is responsive and open the Airway
2. Check if the injured person breathing normally and activate EMS
3. Perform Chest compressions and ventilations

Motivation: An injured person who does not have an open airway or is not breathing normally has little chance for survival unless the ABCs (Airway, Breathing and Circulation) can be restored. The DAN BLS Provider must be able to open an airway and support circulation and ventilation, while waiting for Advanced Life Support (ALS) to arrive. If the EMS as not activated, ALS will not arrive

Required Equipment:

1. CPR manikins

Recommended Equipment:

1. Latex or non-latex medical gloves
2. Plastic resealable bag for barrier device disposal
3. Oronasal resuscitation mask
4. Other barrier devices as necessary

Instructor Role	Students' Role
1. Introduce skill.	1. Observe Instructor demonstration.
2. Demonstrate skill in "real time."	2. Ask questions.
3. Explain and demonstrate skill.	3. Each student must practice a complete CPR sequence on manikin for 2 minutes.
4. Form groups of three.	4. Support other students in learning.
5. Read skill scenario.	5. Seek Instructor assistance if difficulties are experienced.
6. Oversee student practice.	
7. Praise student progress.	
8. Debrief and remediate as necessary.	

Scenario 1 : During a family party at your brother's house, you find your father lying on his side in the living room. What do you do next?

Student action: Scene safety assessment and use of barriers, where is the phone?

Instructor: Scene is safe, phone is in the hall

Student action: Assess responsiveness

Instructor: Your father responds

Student: leave him in the position in which he was found, try to find out what is wrong and activate EMS

Scenario 2 : You're in the bar of a fitness centre, when suddenly a 40 year old person, drops his glass and falls on the floor. After conducting a Scene Safety Assessment, what is your next action? What special concern should you have checked in your safety assessment?

Student action: Assess responsiveness

Instructor: no response

Student action: Assess vital signs

Instructor: The victim is not breathing normally.

Student: Ask a bystander to call EMS and start CPR,

Instructor: Instruct your students to start giving mouth to mouth if a oronasal resuscitation mask is not available (explain the advantage of having a face shield or pocket mask available).
It's recommended to use a face shield when they practise mouth to mouth breathing on the manikin.

Option, the Instructor is allowed to repeat the skill, while students use an oronasal resuscitation mask or other barrier device.

Remark : It is recommended (in the beginning) to divide the skill into 4 parts and have students try each part separately, before having them to do a complete CPR skill.
The 4 sub skills are:

- ⇒ check responsiveness,
- ⇒ Open airway and assess breathing,
- ⇒ provide chest compressions,
- ⇒ provide rescue breaths.

The student however must demonstrate a complete CPR sequence after having practised the sub steps.

Resuscitation - CPR

Follow these simple steps to check for normal breathing and to provide CPR, using the adult BLS sequence.

1. Make sure you, the injured person and any bystanders are safe

2. Check the injured person for a response

- State your name, training and desire to help.
- Ask permission to help.
- Gently shake the injured person's shoulders and ask loudly: "are you all right?"

3a. If he responds:

- Leave him in the position in which you find him provided there is no further danger
- Try to find out what is wrong with him and get help if needed
- Reassess him regularly

3b. If he does not respond:

- Shout for help.
- Turn the injured person on his back and then open the airway using head tilt and chin lift:
- Place your hand on his forehead and gently tilt his head back
- With your fingertips under the point of the injured person's chin, lift the chin to open the airway

4. Keeping the airway open, look, listen and feel for breathing

- Look for the chest movement.
- Listen at the injured person's mouth for breath sounds.
- Feel for air on your cheek.
- Decide if breathing is normal, not normal or absent.

In the first minutes after cardiac arrest, an injured person may be barely breathing, or taking infrequent, noisy gasps. Do not confuse this with normal breathing. Look, listen and feel for no more than 10 seconds to determine whether the injured person is breathing normally. If you have any doubt whether breathing is normal, act as if not normal.

5a. If he is breathing normally:

- Turn him into the recovery position
- Send or go for help / call an ambulance
- Continue to assess that breathing remains normal

5b. If the breathing is not normal or absent:

- Send someone for help and to find and bring an AED if available; or, if you are on your own, use your mobile phone to alert the ambulance service - leave the injured person when there is no other option
- start chest compressions as follows:
- Kneel by the side of the injured person;
- Place one heel of one hand in the centre of the chest (which is the lower half of the

injured person's breastbone (sternum))
- Place the heel of your other hand on top of the first hand:
- Interlock the fingers of your hands and ensure that pressure is not applied over the injured person's ribs. Keep your arms straight, Do not apply pressure over the upper abdomen or the bottom end of the sternum;
- Position yourself vertically above the chest and press down on the sternum at least 5cm (but not exceeding 6cm);
- After each compression, release all the pressure on the chest without loosing contact between your hands and the sternum; repeat a rate of at least 100/minute (but not exceeding 120/minute)
- Compression and release should take equal amounts of time.

6a. Combine chest compressions with rescue breaths.
- After 30 compressions open the airway again using the head tilt and chin lift
- Use oronasal resuscitation mask or pinch the soft part of the nose closed, using the index finger and thumb of your hand of the forehead.
- Allow the mouth to open, but maintain chin lift
- Take a normal breath and place your lips on the inlet of the oronasal resuscitation mask, or around his mouth, making sure that you have a good seal.
- Blow steadily in to the mask / mouth while watching the chest to rise, taking about 1 second as in normal breathing; this is an effective rescue breath.
- Maintaining head tilt and chin lift, take your mouth away from the injured person and watch for the chest to fall as air comes out.
- Take another normal breath and blow into the person's mouth (or in the mask), to achieve a total of 2 effective rescue breaths. The two breaths should not take more than 5 seconds in all. Then return your hands without delay to the correct position on the sternum and give another 30 compressions
- Continue CPR in a ratio of 30:2
- Stop to recheck the injured person only if he starts to wake up: to move, open eyes and to breath normally. Otherwise do not interrupt resuscitation.
- If your initial rescue breath do not make the chest rise as in normal breathing, then before your next attempt:
- Check the injured person's mouth and remove any obstruction
- Recheck that there is adequate head tilt and chin lift
- Do not attempt more than 2 breaths each time before returning to chest compressions

6b. Chest-compression-only CPR may be used as follows:
- If you are not trained, or are unwilling to give rescue breaths, give chest compressions only
- If chest compressions are given, these should be continuous, at a rate of at least 100/minute (but not exceeding 120/minute)

7. Do not interrupt resuscitation until:
- Professional help arrives and takes over; or
- The injured person start to wake up: to move, opens eyes and to breathe normally; or
- You become exhausted

Notes:

- In the first minutes after cardiac arrest, an injured person may be barely breathing, or taking infrequent, noisy gasps. Do not confuse this with normal breathing. If you have any doubt whether breathing is normal, act as if not normal.
- If there is more than one rescuer present, another should take over CPR every 1-2 minutes to prevent fatigue. Ensure the minimum delay during the changeover of rescuers
- For victims of drowning: Give 5 initial rescue breaths before starting chest compressions and perform, if you are alone, 1 minute of CPR before getting help

Mouth-to-mask:

- Position yourself beside the injured person's head to provide rescue breathing and chest compressions
- Apply the mask to the injured person's face, using the bridge of the nose as a guide for correct position.
- Seal the mask by placing your index finger and thumb of the hand closer to the top of the injured person's head along the border of the mask and placing the thumb of your other hand along the lower margin of the mask.
- Place your remaining fingers on the hand closer to the injured person's feet along the bony margin of the jaw and lift the jaw while performing a head tilt-chin lift.
- Compress firmly and completely around the outside margin of the mask to provide a tight seal.
- Provide slow effective rescue breaths while observing for chest rise.

Skill: Providing Care With an AED (Optional)

The Providing Care With an AED skill is an Optional Skill. DAN Instructors should demonstrate this skill within the BLS Provider course as a means to cross-promote the AED course.

Objective: The student will be able to:

1. Recognise the signs of sudden cardiac arrest.
2. Provide defibrillation as soon as possible in the event of cardiac arrest.

Motivation: When an injured person is in cardiac arrest, CPR can continue to oxygenate the body, but it cannot reset a fibrillating heart. Only a defibrillator can do that. Early access to defibrillators greatly increases an injured person's chances of survival. With every minute that passes until defibrillation, there is a 7-10 percent decrease in the likelihood of survival from sudden cardiac arrest.

Required Equipment:

1. Automated External Defibrillator training unit
2. CPR manikin

Recommended Equipment:

1. Latex or non-latex medical gloves.
2. Oronasal resuscitation mask with supplemental oxygen inlet.
3. Plastic resealable bag for barrier device disposal.
4. Other barrier devices as necessary.

Instructor Role	Students' Role
1. Introduce skill. 2. Demonstrate skill in "real time." 3. Explain and demonstrate skill. 4. No student practice recommended. 5. Debrief as necessary.	1. Observe Instructor demonstration 2. Ask questions.

Scenario: You find that the person in the previous scenario is not breathing normally. You direct your friend to begin CPR. What do you do next?
How long should you conduct CPR before connecting the AED?

Providing Care with an AED (Optional)

Unresponsive.

• Shout for help

Not breathing normally.

- Send or go for AED and call EMS
- CPR 30:2 until AED is attached
- Attach the defibrillator pads to the patient and AED.
- Allow the AED to analyse heart rhythm.
- Don't touch the patient.

If shock required: Follow the AED unit's prompts.

- Visually and physically clear the patient.
- State “I’m clear. You’re clear. All clear.”
- Administer shock.
- Resume CPR 30:2 for 2 minutes
- Continue as directed by the voice/visual prompts

If no shock required:

- Continue CPR 30:2 until the injured person starts to wake up: to move, open eyes and to breathe normally
- Continue as directed by the voice/visual prompts

Note: While AED’s can be used in an aquatic environment, you must dry the chest before placing the pads. The AED pads should be placed on the injured person's chest according to the diagrams on
the pads and then the first aid provider should follow the unit's prompts.

Skill: Recovery Position

Objective: The student will be able to:

1. Place a unconscious, breathing person in the recovery position.

Motivation: Placing an unconscious, breathing person in the recovery position is important to maintain an open airway and to prevent blood and vomit obstructing the airway. Gravity will make sure blood or vomit will leave the mouth and is not inhaled.

Required Equipment:

2. None

Recommended Equipment:

1. Latex or non-latex medical gloves
2. First Aid Kit

Instructor Role	Students' Role
1. Introduce skill. 2. Demonstrate skill in "real time." 3. Explain and demonstrate skill. 4. Form groups of three. 5. Read skill scenario. 6. Oversee student practice. 7. Praise student progress. 8. Debrief and remediate as difficulties are experienced.	1. Observe Instructor demonstration. 2. Ask questions. 3. Each Student must practice the recovery position. 4. Support other students in learning. 5. Seek Instructor assistance if necessary.

Scenario: A person falls down on the street. What to do?

Students: Make sure traffic is not a hazard. After performing a scene safety assessment and putting on gloves, assess responsiveness

Instructor: The person is not responding

Student: shout for help and open airway. Check for normal breathing

Instructor: normal breathing is present

Student: Activate EMS and place the injured person in the recovery position.

Instructor: remind students what to say to EMS

Recovery Position

- Remove spectacles
- Kneel beside the injured person and make sure that both his legs are straight
- Place the arm nearest to you at right angles to his body, elbow bent with the hand palm uppermost
- Bring his far arm across the chest and hold the back of the hand against the injured diver's cheek nearest to you
- With your other hand, grasp the far leg just above the knee and pull it up, keeping the foot on the ground.
- Keeping his hand pressed against his cheek, pull the far leg to roll the injured diver towards you onto his side.
- Adjust the upper leg so that both the hip and knee are bent at right angles.
- Tilt the head back to make sure the airway remains open
- Adjust the hand under the cheek, if necessary, to keep the head tilted.
- Check breathing regularly

Skill: Foreign Body Airway Obstruction (FBAO)

Objective: The student will be able to:
1. Encourage a person with mild airway obstruction to cough.
2. Provide back blows and abdominal thrusts for a chocking person (severe airway obstruction).

Motivation: A foreign body airway obstruction prevents a normal flow of air in the windpipe and might result in a respiratory arrest. The rescuer should try to dislodge the obstruction and free the airway.

Required Equipment:
1. CPR manikin

Recommended Equipment:
1. First Aid kit
2. Barrier devices
3. Plastic resealable bag for barrier device disposal

Instructor Role	**Students' Role**
1. Introduce skill. 2. Demonstrate skill in "real time." 3. Explain and demonstrate skill. 4. Form groups of three. 5. Read skill scenario. 6. Oversee student practice. 7. Praise student progress. 8. Debrief and remediate as necessary.	1. Observe Instructor demonstration. 2. Ask questions. 3. Each student must practice this skill 4. Support other students in learning. 5. Seek Instructor assistance if difficulties are experienced.

Scenario: During a dinner, the person sitting next to you, stands up, grabs is neck and is making silent attempts to cough.

Student Action: Ask: Are you chocking?

Instructor: the victim does not responds, but nod with his head

Student: give maximum 5 back blows (or until the foreign materials is no longer blocking airway)

Instructor: the victim is still chocking.

Student: Give up to 5 abdominal thrusts.

Instructor: After 3 Thrusts, the foreign materials is relieved and the airway is free again.

Student: Stop giving Abdominal thrusts.

Instructor: What if the obstruction would still be present or the persons stops breathing?

Remark: *Use a manikin to perform Abdominal thrusts (Heimlich manoeuvre) or practise the thrusts lightly on another student during training*

Remark: *Don't have students performing the back blows with full force during training*

Remark: *The Instructor may decide to teach the back blows to all student first, before having them practise the abdominal thrusts.*

Foreign Body Airway Obstruction

In the case of a **mild** airway obstruction you should encourage the choking victim to cough, but should do nothing else.

If the victim shows signs of a **severe** airway obstruction and is conscious you should:

- Give up to 5 back blows:
  - Stand to the side and slightly behind the victim
  - Support chest with one hand and lean the victim well forward so that when the obstructing object is dislodged, it comes out of the mouth rather than going further down the airway.
  - Give up to 5 sharp blows between his shoulder blades with the heel of your other hand

- Check to see if each back blow has relieved the obstruction. The aim should be to relieve the obstruction with each slap rather than necessarily to give all five.

- If back slapping fails, give up to 5 abdominal thrusts:
  - Stand behind diver and put both arms round the upper part of his abdomen.
  - Lean the victim forwards so that when the obstructing object is dislodged, it comes out of the mouth.
  - Clench your fist and place it between the navel and bottom tip of the sternum.
  - Grasp it with your other hand and pull sharply inwards and upwards; the obstructing object should be dislodged.
  - Repeat up to 5 times

- If the obstruction is still not relieved, continue alternating five back blows with five abdominal thrusts.

If the victim at any time becomes unconscious:

- Support the victim carefully to the ground
- Activate EMS
- Start CPR (chest compressions followed by rescue breaths)

Skill: Control of External Bleeding

Objective: The student will be able to:

1. Demonstrate the techniques for controlling bleeding including direct pressure, elevation and the use of a dressings.
2. Locate and demonstrate the use of pressure points to control external bleeding.

Motivation: Trauma is another word for sudden physical injury. Traumatic injury with external bleeding is an injury that a DAN BLS Provider might encounter. Uncontrolled external bleeding will reduce the amount of blood circulating throughout the body. Shock is caused by lack of oxygen to the body's vital tissues. Being able to control external bleeding may limit shock and is potentially a lifesaving skill.

Required Equipment:

1. Latex or non-latex medical gloves
2. Dressings of various sizes
3. Bandages
4. Pressure dressing

Recommended Equipment:

1. Plastic resealable bag for barrier device disposal
2. Other barrier devices as necessary
3. Moulage materials (makeup and fake blood)

Instructor Role	Students' Role
1. Introduce skill. 2. Demonstrate skill in "real time." 3. Explain and demonstrate skill. 4. Form groups of three. 5. Read skill scenario. 6. Oversee student practice. 7. Praise student progress. 8. Debrief and remediate as necessary.	1. Observe Instructor demonstration. 2. Ask questions. 3. Each student must practice how to control external bleeding. 4. Support other students in learning 5. Seek Instructor assistance if difficulties are experienced.

Scenario: During a mountain walk, your friend slips and falls on his arm. The arm is bleeding heavily just above the wrist.

Student Action: Control bleeding by using direct pressure, elevation and the use of a pressure dressing.

Instructor: Bleeding does not stop. What options should you try next to control bleeding?
Why? Discuss answers. Should you remove any of the dressings or bandages for any reason?

Student: Add more absorbent material. Don't remove the initial pad or dressing. If bleeding continues, use pressure point.

A pressure point should used for up to 60 seconds, and the pressure should be released slowly. A tourniquet should not be used.

Control of External Bleeding

Follow these steps to control external bleeding:

- Assess the scene and the ABC's (use gloves).
- Call the ambulance if required
- Place a pad (sterile gauze) over the wound and apply direct pressure (with your hand) to the wound.
- Elevate the extremity (wound) to slow blood flow
- Secure the pad with a sterile dressing. The pad should not be moved and the dressing big enough to cover the pad and wound site completely.
- The dressing should be tight, but should also not prevent circulation. You can check circulation by squeezing the fingertips and looking for the pink colour under the nail to return quickly.
- Reassure the injured person and keep him still
- When bleeding has stopped, immobilise the wound or extremity. A triangular bandage can be used to limit movement.
- Monitor vital signs, look for signs of shock and act accordingly.
- If trained in it and when available, the rescuer can provide oxygen.

Notes:

- If the bleeding continues and seeps through the pad you are holding on the wound, don't remove it. Instead, add more absorbent material
- Use pressure points if direct pressure does not stop the bleeding.

Skill: Shock Management

Objective: The student will be able to:

1. Demonstrate an ongoing assessment and manage shock.

Motivation: Shock is a complex physiological condition that is the result of lack of oxygen to vital body tissues due to heart failure, abnormal dilation of blood vessels or loss of blood volume. Death may result if steps are not taken to reverse the effects of shock. Maintaining an open airway, ensuring adequate breathing and circulation, and controlling bleeding is the most effective method of managing shock for the DAN BLS Provider.

Required Equipment:

1. Latex or non-latex medical gloves
2. Thermal blanket

Recommended Equipment:

1. Plastic resealable bag for barrier device disposal
2. Oxygen unit

Instructor Role	Students' Role
1. Introduce skill. 2. Demonstrate skill in "real time." 3. Explain and demonstrate skill. 4. Form groups of three. 5. Read skill scenario. 6. Oversee student practice. 7. Praise student progress. 8. Debrief and remediate as necessary.	1. Observe Instructor demonstration. 2. Ask questions. 3. Each student must practice shock management and perform an ongoing assessment. 4. Support other students in learning. 5. Seek Instructor assistance if difficulties are experienced.

Scenario: You've finally gotten your friend's arm to stop bleeding. He looks pale and his skin is cool and clammy. What is the next step for providing first aid?

Student Action: Begin treating the person for shock and provide an ongoing assessment. Shock is an indication for the BLS provider to administer supplemental oxygen if trained in it.

Instructor: Should you provide any food or drinks? Discuss answer.

Shock Management

Follow these simple steps to manage shock and provide for ongoing assessment.

- Make sure the scene is safe
- Assess the vital signs
- Activate EMS
- Control (severe) external bleeding if present
- Maintain open airway
- Comfort and reassure injured person
- Position the victim on the floor, with the legs slightly elevated (20-25cm),
- Provide oxygen
- Protect the victim from cold or heat. Maintain normal body temperature
- Monitor the level of responsiveness
- Monitor and ensure breathing

Remarks:

⇒ Do not give food or drinks to a person in shock

⇒ Do not force a person (specially with a heart or breathing problem) to lie down. Place him in the most comfortable (sitting) position

⇒ Don't elevate his legs if it would make another injury worse.

Skill: Combined Scenarios (Optional)

Objective: The student will be able to:

1. Provide care to a person with life threatening injuries, using several BLS skills learned during the DAN BLS course.

Motivation: It might be possible that a person with external bleeding goes into shock and even stop breathing. In this case the rescuer will need to use a combination of the first aid techniques learned during the former skills

Required Equipment:

1. DAN First Aid kit or equivalent
2. Oronasal resuscitation mask
3. Oxygen unit

Recommended Equipment:

1. Latex or non-latex medical gloves
2. Plastic resealable bag for barrier device disposal

Instructor Role	Students' Role
1. Introduce skill. 2. Form groups of three. 3. Read skill scenario. 4. Oversee student practice. 5. Praise student progress. 6. Debrief and remediate as necessary.	1. Ask questions. 2. Students must practice their BLS skills during at least one combined scenario. 3. Support other students in learning. 4. Seek Instructor assistance if difficulties are experienced

Note: It is recommended to have students practise several of these optional skills as it will increase course quality and student's confidence.

Combined Scenarios (Optional)

Scenario 1: During dinner with some friends in a restaurant, one of your friends grabs his neck and starts coughing ineffectively. There is a phone next to the cash register and a first aid kit is present in the kitchen.

Student Action: Provide care for severe airway obstruction.

Instructor: after giving 5 back blows and a few abdominal thrusts, your friend becomes unconscious

Accompany him to the floor, place him on his back and give chest compressions.

A piece of food comes our of the mouth, but your fiend is not responding.

Check Vital functions (check responsiveness, open airway and check for normal breathing)

Normal breathing is present.

Place the victim in the recovery position

Ask students when and how was the EMS called? Was a first aid kit asked? Are barriers used or asked for? What if he wasn't breathing anymore?

Scenario 2: You, your partner and 2 friends are in your garden. Your neighbour is cleaning his window in his own garden, when suddenly he slips, falls forward and pushes against the window. The neighbour doesn't fall, but the window breaks and the glass cuts the neighbour in his underarm. Blood is spurting out of the wound. Your have a cellular phone and you have a first aid kit in your kitchen.

Student Action: Scene Safety assessment. Be careful for the glass, ask your partner to bring the first aid kit and have somebody call the EMS

Instructor: The first aid kit arrives

Provide care for external bleeding – use gloves

When bandaging the wound, you notice that blood seeks through the dressing.

Add another dressing, keep using direct pressure and elevation of the wound

Your neighbour has a pale, cold and clammy skin and is breathing shallow and rapid. He seems restless.

Provide care for Shock

Your neighbour asks some water.

Do not give water

Your neighbour falls unconscious.

Check vital functions

Unresponsive, but breathing present.

Discuss the position in which you should place the injured person. The recovery position can be used while elevating the legs and providing care for shock. Also ask students what they would have said to the EMS.

Scenario 3: During your holiday you are with your family at the hotel's swimming pool, when a 50 year old male tourist, which is coming out of the water starts complaining about pain in his chest and is sweating heavily. When he tries to sit down, he suddenly drops on the ground. The hotel has a first aid kit and AED in the reception and the closest fixed phone is in the restaurant of the hotel

Student Action: Start Scene safety assessment and check responsiveness.

Instructor: No response

Open airway and check breathing.

No breathing.

Ask a bystander to call the EMS and to get the AED. Start CPR

Is the rescuer trained in the use of an AED? Discuss with students the importance of the AED? Would it be possible to use an AED in a wet environment? What was done during the Scene Safety assessment? Are barriers present? Which phone is used? Could there have been a cellular phone present?

Scenario 4: You are spending a day at the beach when you hear a cry for help coming from the water. You see a 25 year old woman shouting for help a bit further in the see. She struggles to keep her head above water. A small boat is nearby.

Student Action: Start Scene safety assessment.

What could have been happened. What danger might be present? What should you do

Instructor: she is now with her face down into the water and the water around here seems bloody.

Why is she bleeding? And where? What could have happened?

While 2 swimmers are bringing her to the beach, you hear that a boat drove over her legs. When she is at the beach, you are ready to assist and see she is bleeding at her leg.

Check responsiveness and breathing

No signs of breathing present

Start CPR, by giving 5 initial rescue breaths, followed by CPR "30:2"

After the first compressions she starts to cough and fluid comes our of her mouth

Clear the airway

She is now breathing, but unconscious, she is still bleeding

Provide care for external bleeding and shock (prevention)

Discuss why 5 initial breaths were administered and when the EMS should have been called. What if no barriers were present? Discuss the use of a plastic bag to protect yourself if nothing else is present as a barrier.

DAN BLS Provider Course Quick Reference Chart.

1. **Registration and Introductions**

2. **Knowledge Development Session**
   - DAN BLS slide series (76 slides)

3. **Skills Development Session [Perform the following exercises.]**
   1. Scene Safety Assessment
   2. Resuscitation
   3. Providing care with an AED (optional)
   4. Placing an unconscious breathing person in the recovery position
   5. Providing care for a person with a foreign body airway obstruction (chocking)
   6. Control of (severe) external breathing
   7. Shock management
   8. Combined Scenario's (optional)

4. **Examination and Review**

5. **Award DAN BLS Provider Wall Certificates or Temporary Cards.**

6. **Additional time for knowledge and skill remediation for individuals requiring additional practice.**