BAU TIP

BAHÇEŞEHİR ÜNİVERSİTESİ TIP FAKÜLTESİ

"scientia et amore vitae"

BAHÇEŞEHİR UNIVERSITY

FACULTY OF MEDICINE

CLINICAL SKILLS EDUCATION

LEARNING GUIDES

2022

Department of Medical Education

CLINICAL SKILLS LABORATORY (CSL) RULES

1	Work in the CSL is permitted only under appropriate supervision and at authorized times.
2	Laboratory coats (with your name tag) must be worn for each practical session. Gloves must be used when necessary (Do not under any circumstances put on latex gloves if you have had any reaction to the wearing of latex gloves or a latex reaction previously).
3	Long hair should be tied back neatly, away from the shoulders.
4	Fingernails should be clean and short. False nails should not be worn.
5	Enclosed footwear must be worn - (thongs and open sandals are not allowed).
6	Keep your personal stuff or things (mobile phone, bags, laptop) out from the laboratory.
7	Smoking, eating, drinking and chewing gum are prohibited while in the laboratory.
8	Permission from faculty must be obtained prior to any recording.
9	Visitors are not allowed in the lab.
10	Do not lean, hang over or sit on the laboratory tables; take care not to damage equipment when raising and lowering beds.
11	Clean all manikins and models after use and leave the laboratory clean and tidy (including returning all chairs/equipment to their original location).
12	Do not use any equipment you are unsure how to use.
13	Do not remove instruments.
14	Do not touch the computers used to run the mannequins.
15	Do not apply betadine, markers, pens, or inks on the mannequins.
16	Products and supplies in the lab are intended for teaching purposes only and are no safe for human or animal use.
17	Use clinical waste and sharps bins as appropriate; ask if unsure.
18	Report broken or damaged equipment.
19	Immediately report any accidents or injuries.
20	Learn emergency exit routes.
21	Conduct yourself in a professional and academic manner (act as you would in a real hospital setting).
22	All mannequins need to be treated with the same respect as patients (Keep ''patients'' clothed and covered for times that do not necessitate exposure).
23	Respect others in the CSL, keep noise down.
24	Follow the instructions of your lecturer (Your lecturer will ask you to leave the laboratory if you are behaving in a manner that compromises the safety or learning of yourself or others).
25	Students will be held responsible for damage to the equipment as a result of not following CSL policies and procedures.
26	Arrive on time for laboratory classes (If you are late for mandatory sessions that a certificate of attendance is issued, your lecturer will not allow you to join the class).
27	Always wash your hands before entering and when leaving the CSL.
28	Maintain social distance in the laboratory.

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CLASS I

SCORING GUIDE	
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HAND WASHING				
	Aim: Learn proper hand washing steps **Equipment Required:** Water, soap or cleaning solution, paper towels			
		1	**2**	**3**
1	Wet hands with water.			
2	Apply enough soap to cover all hand surfaces.			
3	Rub hands palm to palm.			
4	Rub your right palm over the dorsum of your left hand, with fingers interlaced, then vice versa.			
5	Rub your hands together palm to palm with fingers interlaced.			
6	Rub the backs of your fingers to opposite palms with your fingers interlocked .			
7	Place your left thumb in your clasped right palm and rotationally rub the thumb, then repeat using your right thumb and clasped left palm.			
8	Rotationally rub the clasped fingers of your right hand into the left palm and vice versa.			
9	Rinse hands with water.			
10	Dry hands thoroughly with a single-use paper towel.			
11	Use the towel to turn off the tap (or elbow if handle present).			

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STERILE GLOVING				
	Aim: Demonstrate the proper method for donning sterile gloves **Equipment Required:** Sterile Gloves **Safety considerations:** *Choose the right size of gloves. Ensure the patient does not have a latex allergy. Hands must be washed before and after the procedure.*			
		1	**2**	**3**
1	Remove all jewelers. Artificial nails, extenders, or chipped nail polish should be worn.			
2	Inspect packaging for sterility (Examine sterile glove packaging for expiry date, intactness, and tears).			
3	Provide hand hygiene.			
4	Open sterile packaging by peeling open the top seam and pulling down without contaminating inner package.			
5	Place inner package on flat surface and unfold to look like an open book.			
6	Identify right and left gloves.			
7	Start with dominant hand first. Lift paper flap on one side and pick up glove by grasping the folded cuff, taking care not to contaminate outer surface of glove.			
8	Slide hand into glove touching only the inner glove surface.			
9	With ungloved hand, lift remaining paper flap to expose second glove.			
10	With the gloved hand, pick up the second glove by sliding fingers under the cuff of the second glove.			
11	Slip bare hand into the second glove, once again touching only the inner glove surface.			
12	Unfold cuffs by sliding gloved fingers under the cuff against sterile outer side of glove			

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PREPARING MEDICATIONS FROM AMPULES				
	Aim: Show how to withdraw medication from an ampule **Equipment Required:** Medication in an ampule, syringe, needle, small gauze pad, sharps container			
		1	**2**	**3**
1	Review patient name, medication name, dose, route of administration, time of administration.			
2	Check date of expiration of medication ampule.			
3	Perform hand hygiene.			
4	Connect needle to syringe if not already prepared in packaging.			
5	Tap top of ampule lightly and quickly with finger until fluid removes from neck of ampule.			
6	Place small gauze pad around neck of ampule.			
7	Snap neck of ampule quickly and firmly away from hands.			
8	Hold ampule at an angle or set on flat surface.			
9	Pick up syringe and remove needle cap.			
10	Insert needle into ampule, do not allow needle to touch outside of ampule to prevent contamination.			
11	Gently pull back on syringe plunger to aspirate medication into syringe.			
12	Hold syringe with needle pointing up to express air bubbles.			
13	Tap side of syringe to bring bubbles up toward the needle.			
14	Pull back slightly on plunger, and expel air. Be careful not to eject the medication.			
15	Dispose of ampule and any used needles in sharps container.			
16	Wash hands.			

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	PREPARING INJECTION FROM A VIAL			
	Aim: Show how to withdraw medication from a vial **Equipment Required:** Medication in a vial, syringe, needle, alcohol prep pad, sharps container			
		1	**2**	**3**
1	Review patient name, medication name, dose, route of administration, time of administration.			
2	Check date of expiration of medication vial.			
3	Perform hand hygiene.			
4	Connect needle to syringe if not already prepared in packaging.			
5	Flip of the plastic top on the vial.			
6	Clean rubber seal with alcohol prep pad and let dry for at least 20 seconds.			
7	Pick up syringe and remove needle cap.			
8	Draw necessary amount of air into syringe by pulling back on plugger (the amount of air should be equal the volume of medication needed).			
9	Place the vial on a flat surface and insert tip of needle through the center of the rubber seal. Aim straight down.			
10	Inject air into vial.			
11	Hold onto plunger and invert vial. Position vial between thumb and middle fingers on non-dominant hand.			
12	Grasp end of syringe and plunger with thumb and forefinger of dominant hand.			
13	Position needle tip below the fluid level.			
14	Allow medication to flow into syringe. Pull back slightly on plunger if necessary until desired amount is obtained.			
15	Remove syringe with needle from the vial.			
16	Tap side of syringe to bring bubbles up toward the needle.			
17	Pull back slightly on plunger, and then expel air.			
18	Dispose of supplies.			
19	Wash hands.			

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INTRAMUSCULAR INJECTION				
	Aim: Explain how to administer an intramuscular injection **Equipment Required:** Medication, syringe, alcohol prep pad, tampon, gloves, sharps container			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure and medication to be administered.			
4	Check for allergies, bleeding disorders and anticoagulants.			
5	Gain patient consent.			
6	Check the 7 rights of medication (*Right: person, drug, dose, time, route, to refuse, documentation of the prescription and allergies).*			
7	Wash hands, don gloves.			
8	Draw up appropriate medication.			
9	Choose appropriate site for injection and position the patient appropriately.			
10	Clean the site *(Begin at the center of the site and continue moving outward in a circular motion)*. Let dry.			
11	Remove the needle cap by pulling it straightly.			
12	Hold the syringe with the dominant hand's thumb and forefinger as if holding a dart.			
13	With the thumb and 3rd finger of nondominant hand hold the skin around the injection site.			
14	Warn the patient of a sharp scratch.			
15	Insert the needle with a quick thrust, at a 90-degree angle deep into the muscle.			
16	After the needle pierces the skin, stabilize the syringe with your non dominant hand.			
17	With the dominant hand aspirate for blood return, if not then inject the medication slowly. If there is blood discard the syringe and restart the procedure.			
18	Withdraw needle and apply pressure with a gauze square.			
19	After bleeding has stopped, apply small bandage.			
20	Discard the syringe in sharps container without recapping and all other supplies.			
21	Wash hands.			
22	Thank patient, discuss post injection care with patient.			
23	Documents medication administered and procedure appropriately.			

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SUBCUTANEOUS INJECTION				
	Aim: Explain how to administer a subcutaneous injection **Equipment Required:** Medication, syringe, alcohol prep pad, tampon, gloves, sharps container			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure and medication to be administered.			
4	Check for allergies, bleeding disorders and anticoagulants.			
5	Gain patient consent.			
6	Check the 7 rights of medication (*Right: person, drug, dose, time, route, to refuse, documentation of the prescription and allergies).*			
7	Wash hands, don gloves.			
8	Draw up appropriate medication.			
9	Choose appropriate site for injection and position the patient appropriately.			
10	Clean the site *(Begin at the center of the site and continue moving outward in a circular motion)*. Let dry.			
11	Remove the needle cap by pulling it straightly.			
12	Hold the syringe in the dominant hand between the thumb and forefinger.			
13	Warn the patient of a sharp scratch.			
14	Grasp the area surrounding the injection site with your non dominant hand to lift the adipose tissue up and away from the underlying muscle and tissue (especially for thin patients).			
15	Insert the needle at 45-90 degree angle.			
16	When the needle is in place, release the pinch, move your non dominant hand to the end of the needle and with your dominant hand aspirate and if it is clean inject the medication slowly.			
17	Withdraw needle and apply pressure with a gauze square.			
18	Do not massage the site(after heparin injections hematoma may occur).			
19	Discard the syringe in sharps container without recapping and all other supplies.			
20	Wash hands.			
21	Thank patient, discuss post injection care with patient.			
23	Documents medication administered and procedure appropriately.			

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INTRADERMAL INJECTION				
	Aim: Explain how to administer an intradermal injection **Equipment Required:** Medication, syringe, alcohol prep pad, tampon, gloves, sharps container			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure and medication to be administered.			
4	Check for allergies, bleeding disorders and anticoagulants.			
5	Gain patient consent.			
6	Check the 7 rights of medication (*Right: person, drug, dose, time, route, to refuse, documentation of the prescription and allergies.)*			
7	Wash hands, don gloves.			
8	Draw up appropriate medication.			
9	Choose appropriate site for injection and position the patient appropriately.			
10	Clean the site *(Begin at the center of the site and continue moving outward in a circular motion)*. Let dry.			
11	Remove the needle cap by pulling it straightly.			
12	Hold the syringe in the dominant hand between the thumb and forefinger.			
13	Warn the patient of a sharp scratch.			
14	With your non dominant hand, hold the skin taut over the injection site prior to injection.			
15	Insert the needle, bevel up, at a 15-degree angle into the upper layers of skin.			
16	Inject the medication slowly. You will see a small wheal or bleb form on injecting, signaling proper intradermal placement.			
17	Withdraw needle.			
18	Do not massage the site.			
19	Discard the syringe in sharps container without recapping and all other supplies.			
20	Wash hands.			
21	Thank patient, discuss post injection care with patient.			
22	Documents medication administered and procedure appropriately.			

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	TEMPERATURE TAKING (Orally)			
	Aim: Explain how to take an oral temperature **Equipment required:** Appropriate thermometer			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Explain procedure to be administered, check patient had not drunk a warm or hot drink in the last 10 minutes.			
3	Gather equipment, apply a plastic sheath to the probe if required.			
4	Wash your hands and wear gloves.			
5	Ask the patient to open his/her mouth.			
6	Place the probe under the tongue.			
7	Ask the patient to close his/her mouth.			
8	Remove the thermometer on hearing the audible tone. (Measurement time depends on the device used. Please check manufacturer's instructions).			
9	Read temperature.			
10	Dispose of sheath.			
11	Wear off gloves and wash your hands.			
12	Record the temperature on the patient's observation chart.			

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	TEMPERATURE TAKING (Per axilla)			
	Aim: Explain how to take an axillary temperature **Equipment required:** Appropriate thermometer			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Explain procedure to be administered.			
3	Gather equipment.			
4	Wash your hands and wear gloves.			
5	Help the patient to loosen any clothing for easy access to the axilla.			
6	Ensure the axilla is dry, place the probe in the axilla.			
7	Ask the patient to hold his/her arm across his/her chest.			
8	Remove the thermometer on hearing the audible tone. (Measurement time depends on the device used. Please check manufacturer's instructions).			
9	Read temperature.			
10	Clean/dispose of used thermometer according to policy.			
11	Wear off gloves and wash your hands.			
12	Record the temperature on the patient's observation chart.			

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	TEMPERATURE TAKING (Per rectum)			
	Aim: Explain how to take a rectal temperature **Equipment required:** Appropriate thermometer			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Explain procedure to be administered.			
3	Gather equipment.			
4	Wash your hands and wear gloves.			
5	Ensure patient's privacy.			
6	The patient should lie on his/her side with knees bent.			
7	Gently insert the thermometer probe 2-4 cm into the patient's anus.			
8	Remove the thermometer probe after the required time (Measurement time depends on the device used. Please check manufacturer's instructions).			
9	Read temperature.			
10	Clean/dispose of used thermometer according to policy.			
11	Wear off gloves and wash your hands.			
12	Record the temperature on the patient's observation chart.			

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	TEMPERATURE TAKING (Via the ear canal)			
	Aim: Explain how to take an ear temperature **Equipment required:** Appropriate thermometer			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Explain procedure to be administered.			
3	Gather equipment, apply disposable cover.			
4	Wash your hands and wear gloves.			
5	Ensure that you have good access to the patient's ear.			
6	Place the probe in the ear.			
7	Remove the thermometer probe after the required time (Measurement time depends on the device used. Please check manufacturer's instructions).			
8	Read temperature.			
9	Dispose of cover.			
10	Wear off gloves and wash your hands.			
11	Record the temperature on the patient's observation chart.			

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	PULSE MEASUREMENT			
	Aim: Explain how to check pulse **Equipment Required:** A watch with a seconds hand			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Explain the patient what you are about to do; if the patient climbed stairs, walked, or tired, tell him/her to rest 5-10 minutes.			
3	Perform hand hygiene.			
4	Place the tips of your 2nd and 3rd fingers on the radial artery.			
5	Count the pulse for at least 20 seconds (X3 for beats per minute) if the pulse is regular. If it is irregular, count for 60 seconds.			
6	Comment on the rate, volume, and rhythm.			
7	Record findings on the patient's chart.			
8	Thank and reassure the patient.			
9	Wash hands.			

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	BLOOD PRESSURE MEASUREMENT			
	Aim: Explain how to measure blood pressure **Equipment Required:** Sphygmomanometer, stethoscope			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Perform hand hygiene.			
4	Explain procedure to be administered and gain consent.			
5	Before the measurement, have the patient sit on a chair, with feet on the ground and arms at the level of the heart, for at least 5 minutes. Make sure the patient's arm is completely exposed (The upper part of the arm should not be constricted by the rolled up sleeve of the patient's garment).			
6	Empty the cuff completely so that no air is left in.			
7	Place cuff on arm 2-3 cm above the elbow, so that it fits snugly, but does not compress the arm (There should be 1 cm between the cuff and skin of arm).			
8	Place stethoscopes in ears.			
9	Place diaphragm on brachial artery without pressing on it (Do not insert it between cuff and skin so that it will not be under pressure when cuff is inflated).			
10	Turn off valve of manometer completely and start inflating cuff.			
11	Simultaneously palpate radial pulse.			
12	Inflate an additional 15-20 mmHg after the pulse disappears.			
13	Stabilize the stethoscope on the brachial artery without compressing it and turn on the valve. The pressure should drop by 2-3 mmHg every second.			
14	While the pressure drops 2-3 mmHg/sec, listen for Korotkoff sounds. The value at which you hear the first sound indicates the systolic blood pressure. The value at which the sounds disappear indicates the diastolic blood pressure.			
15	Take your stethoscope off.			
16	Empty air from cuff.			
17	Record findings on the patient's chart.			
18	Thank and reassure the patient.			
19	Perform hand hygiene.			

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	RESPIRATORY RATE MEASUREMENT			
	Aim: Explain how to measure respiratory rate **Equipment Required:** A watch with a seconds hand			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Explain the patient what you are about to do.			
3	Observe the patient's chest and count the respirations over at least 30 seconds (X2 to calculate breaths per minute).			
4	Also note color of skin, lips, mucous membrane, and nail beds and also signs of restlessness, irritability, and confusion.			
5	Note the nature of breathing.			
6	Record findings on the patient's chart.			
7	Thank and reassure the patient.			

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	MEASURING OXYGEN SATURATION WTH PULSE OXIMETRY			
	Aim: Explain how to measure oxygen saturation with a pulse oximetry **Equipment Required:** Oxygen saturation monitor			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Explain the patient what you are about to do.			
3	Hand hygiene.			
4	Place probe on the finger or ear lobe of the patient.			
5	Allow the reading to stabilize.			
6	Record the reading and document this in the patient's chart.			
7	Remove the probe unless continuous monitoring is required (if continuous monitoring is required, alternate site of probe regularly to prevent tissue ischemia).			
8	Thank and reassure the patient.			

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	RECOVERY POSITION			
	Aim: Explain how to put someone in the recovery position Unconscious patient with a pulse and breathing (Keep in mind the possibility of neck injury)			
		1	**2**	**3**
1	Knee beside the person.			
2	Straighten their legs.			
3	Place the arm nearest you at right angles.			
4	Grasp the hand furthest to you, place the back of their hand against their cheek closest to you.			
5	Lift the leg furthest away from you at the knee and place their foot on the floor.			
6	Using their knee as a lever, pull the person onto their side.			
7	Ensue their head is still tilted back.			
8	Assess ABC (Airway, breathing, circulation).			

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	CHOKING FIRST AID- ADULT-HEIMLICH MANEUVER			
	Aim: Explain how to perform the Heimlich Maneuver Conscious choking adult from a lodged supra-laryngeal foreign body; Conscious adult with universal choking sign			
		1	**2**	**3**
1	Stand behind the person.			
2	Wrap your arms around the upper abdominal region of the person about two inches above the belly button.			
3	Make a fist with one of your hand and wrap your other hand tightly over the fist.			
4	Deliver 5 sharp midline thrusts inward and upward.			
5	If the patient is pregnant or obese, place your hand in the center of the chest to compress, rather than in the abdomen.			
6	Repeat until the object is expelled and the person can breathe or cough on their own.			
7	If the person becomes unconscious, lay him on his back on the floor, call 112 (Turkey emergency number) and start rescue breathing or CPR.			

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	CHOKING FIRST AID- INFANT			
	Aim: Explain how to help a choking baby Choking infant			
		1	**2**	**3**
1	Sit down and place the infant stomach down across your forearm.			
2	Point the infant's head downward, lower than the body.			
3	Give five quick, forceful blows on the infant's back with heel of your hand.			
4	If object is not free after 5 blows, turn the infant face up, support the head.			
5	Place two fingers in the middle of the infant's breastbone.			
6	Give five quick downward thrusts, compressing the chest 1/3 to 1/2 the depth of the chest.			
7	Look in the mouth to check if you can see the object (remove the object with your finger **only if you can see it**).			
8	Continue this series of 5 back blows and 5 chest thrusts until the object is dislodged or the infant loses consciousness.			
9	If the child becomes unresponsive, perform CPR.			

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	BASIC LIFE SUPPORT (BLS)			
	Aim: Learn the steps to perform basic life support			
		1	**2**	**3**
1	Check if the patient's surroundings are safe before approaching (you will not be able to help the patient if you injure yourself).			
2	Put on gloves as soon as possible.			
3	Stand on the side of the patient.			
4	Check if the patient responds: Gently shake the patient's shoulders and ask loudly ''Hello, can you hear me?'' ''Are you alright?''			
5	If the patient responds, ask her /his complaint, and call 112 (Turkey emergency number).			
6	If there is no response from the patient, shout for help (112 and automated external defibrillator).			
7	Position the patient on her /his back (keep in mind the risk of cervical spine injury).			
8	**AIRWAY:** Open the airway using a head-tilt chin-lift maneuver (By putting one hand on the patient's forehead and the other on the bony protrusion of the lower jaw, push patient 's head backwards and the jaw forwards) If the patient is suspected to have suffered significant trauma, perform a jaw-thrust rather than a head-tilt chin-lift maneuver (Put each hand on one corner of the lower jaw and push upwards and forwards).			
9	Inspect the airway for obvious obstruction (If you see a foreign object, wrap a piece of bandage or cloth around your finger and remove the object with a sweeping motion).			
10	**BREATHING: Look, Listen, Feel** Kneel next to the patient, position your head looking down towards the chest, with your cheek above the patient's mouth. Look for up-down movements of chest wall.			
11	Leaning over the patient, listen for any evidence of breath sounds.			
12	Leaning over the patient, try to feel for air blowing against your cheek.			
13	If the patient is breathing, take the patient into the recovery position (if there is no risk of spinal injury) , check for any bleeding, deformity and try to keep the airway open and watch for any change in breathing.			
14	If the patient is not breathing, then start to perform the chest compressions and rescue breaths (CPR) immediately.			
	Rescue breaths: Mouth to mouth: Use the fingers of one hand to pinch the person's nostrils shut (prevent air from escaping through the nose) Cover his/her mouth with yours, give rescue breaths by gently for at least 1 second (check to see if the person's chest rises as you give the breath) **Mouth-to-nose:** Close the patient's mouth by supporting the lower jaw with one hand and give the breath through his/her nose for at least 1 second).			
15	**CIRCULATION:** Perform 30 chest compressions and 2 rescue breaths.			
16	Place the heel of one hand in the centre of the chest.			
17	Place other hand on top and interlock fingers.			
18	Keep your elbow straight.			
19	Compress the chest (4-5 cm with every compression).			
20	After each compression, let the sternum rise back to its original position.			
21	Continue with chest compressions at a speed of 100 compressions/minute.			

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	DEFIBRILLATION			
	Aim: Learn how to use a defibrillator **Equipment Required:** Gloves, automated external defibrillator			
		1	**2**	**3**
1	Check if the patient's surrounding is safe before approaching.			
2	Put on the gloves as soon as possible.			
3	Stand on the side of the patient.			
4	Check for the response verbally, tactually or with a painful stimulus.			
5	If the patient responds, ask her /his complaint, and call 112 (Turkey emergency number).			
6	If there is no response from the patient, shout for help (112 and automated external defibrillator).			
7	Position the patient on her /his back (keep in mind the risk of cervical spine injury).			
8	Open the patient's airway.			
9	Check the patient's breathing.			
10	If the patient is not breathing, then start to perform the chest compressions and rescue breaths (CPR) immediately and keep on doing until defibrillator reaches.			
11	Open the automated external defibrillator(AED) and switch it on.			
12	Attach the AED pads on the patient's bare chest (patient's body must be dry, if possible clean the area and during shock delivery no touch to the patient).			
13	Follow voice prompts.			
14	Deliver shock by pressing shock button.			
15	Follow AED instructions (apply the shock delivery or no shock and perform CPR).			

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	APPLYING A CERVICAL COLLAR			
	Aim: Learn how to apply a cervical collar **Equipment Required:** Cervical collar			
		1	**2**	**3**
1	Check if the patient's surroundings are safe before approaching (you will not be able to help the patient if you injure yourself).			
2	Put on gloves if possible.			
3	Do not move the patient, do not move the patient's neck.			
4	Stabilize the patient's head and neck with an assistant.			
5	Remove clothes, necklaces, ties, etc. from the neck.			
6	Prepare a neck collar with the appropriate size for the patient.			
7	Open the collar and place it on the back of the neck so that the chin area is facing to the front.			
8	Position the collar so that the chin piece is seated on the chin.			
9	Stabilize the collar so that it is neither too tight nor too loose.			
10	Remove ear from under the collar.			
11	After the application of the collar, proceed with the patient's positioning on a spinal board/other device for transportation to the hospital.			

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	OROPHARYNGEAL AIRWAY INSERTION			
	Aim: Learn how to insert an oropharyngeal airway **Equipment Required:** Oropharyngeal airway of appropriate size, gloves Optional: suction equipment, bag-valve mask device			
	Suction mouth and pharynx to clear airway of secretions so they do not enter the airway during insertion. Remove dentures if loose			
		1	**2**	**3**
1	Determine the appropriate size of the oropharyngeal airway (Hold the airway beside the patient's cheek with the flange at the corner of the mouth. The tip of an appropriately sized airway should just reach the angle of the mandibular ramus).			
2	To prevent trauma to the mouth during insertion, perform head-tilt chin-lift or jaw thrust technique to open the patient's mouth wide.			
3	Insert the airway into the mouth (concave up).			
4	Rotate the airway 180 degrees as you advance it into the posterior oropharynx. The flange should rest between the patient's teeth. If gagging, retching or vomiting occurs, remove the airway immediately to prevent aspiration.			

CLASS II

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	VENIPUNCTURE			
	Aim: Learn how to perform venipuncture **Equipment Required:** Antiseptic, tourniquet, gloves, needle, vacuum tube holder, collection tube, band aid			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details. Label the tube with the patient's particulars.			
3	Explain procedure, gain patient consent.			
4	Wash and dry your hands. Put on gloves.			
5	Position the patient.			
6	Select the site, preferably at the antecubital area. Palpate the area to locate the anatomic landmarks.			
7	Apply a tourniquet, about 4–5 finger widths above the selected venipuncture site.			
8	Ask the patient to form a fist so that the veins are more prominent.			
9	Disinfect the site with alcohol using circular motion and allow to dry. Do not touch the site once alcohol or other antiseptic has been applied.			
10	Assemble the needle and vacuum tube holder. Insert the collection tube into the holder. Remove cap from needle.			
11	Anchor the vein by holding the patient's arm and placing a thumb below the venipuncture site.			
12	Penetrate the skin at a 15-35 degree angle with bevel side up and enter the vein.			
13	Push the tube completely onto the needle. Blood should begin to flow into the tube.			
14	Once sufficient blood has been collected, release the tourniquet.			
15	Withdraw the needle gently and then apply gentle pressure to the site with a clean gauze, put on band aid if needed.			
16	Dispose all used materials, discard needle and syringe into the sharps container.			
17	Remove gloves, perform hand hygiene.			

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	PERIPHERAL INTRAVENOUS CANNULATION			
	Aim: Learn how to perform peripheral intravenous cannulation **Equipment Required:** Alcohol cleanser, gloves, tourniquet, iv cannula, dressing to secure cannula, saline flush and sterile syringe			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure, gain patient consent.			
4	Wash and dry your hands. Put on gloves.			
5	Position the patient's arm.			
6	Apply a tourniquet, about 4–5 finger widths above the selected venipuncture site.			
7	Disinfect the site with alcohol using circular motion and allow to dry. Do not touch the site once alcohol or other antiseptic has been applied.			
8	Remove the cannula from its packaging and remove the needle cover ensuring not to touch the needle.			
9	Hold the cannula in your dominant hand. Stretch the skin over the vein to anchor the vein with your non-dominant hand.			
10	Insert the needle bevel upwards at about 30 degrees. Advance the needle until a flashback of blood is seen in the hub at the back of the cannula.			
11	Gently advance the cannula over the needle whilst with drawing the guide.			
12	Release the tourniquet, apply pressure to the vein at the tip of the cannula and remove the needle fully.			
13	Remove the cap from the needle and put this on the end of the cannula.			
14	Dispose the needle into the sharps container.			
15	Apply the dressing to the cannula to fix it in place.			
16	Flush the cannula with 2- 5 ml of saline (No resistance should be felt. Check for any signs of extravasation around the cannula site. Remove cannula if suspected).			
17	Remove gloves, perform hand hygiene.			

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	DRESSING WOUNDS IN SKIN INJURIES			
	Aim: Learn how to properly dress a wound The basic principles for the management of a wound or laceration are hemostasis, cleaning the wound, analgesia, skin closure and dressing and follow-up advice. Hemostasis: In most wounds, hemostasis will be spontaneous. In cases of significant injury or laceration of vessels, measures to reduce bleeding and aid hemostasis should be taken (pressure, elevation, tourniquet, suturing).			
	Equipment Required: Saline solution for irrigation, wound dressing set, antiseptic solution (povidone-iodine, chlorhexidine), adhesive bandage, gloves			
		1	**2**	**3**
1	Prepare the supplies.			
2	Position the patient and the wound.			
3	Perform hand hygiene.			
4	Put on gloves.			
5	Squirt saline solution into the wound to dislodge remaining particulate matter.			
6	Clean wound thoroughly by irrigating it completely with the saline.			
7	Provide hemostasis if necessary. Direct pressure to the site is the primary technique.			
8	Open wound dressing set.			
9	Put on sterile gloves.			
10	Fold gauze inside the dressing set using the clamp and tissue forceps.			
11	Ask your assistant to pour antiseptic solution on the gauze without contaminating it.			
12	Wipe the surroundings of the wound with circular motions without touching the inside.			
13	Clean edges of wound with circular motions from center to periphery.			
14	Throw away gauze.			
15	Pick up another gauze and drape it on the wound.			
16	Drape one more gauze in the same way.			
17	Apply adhesive tape or a circumferential gauze wrap to keep the dressing in place. Be careful not to place circumferential wraps too tightly, which may lead to excessive compression and subsequent ischemia.			
18	Throw away waste in appropriate waste bins.			
19	Wash your hands.			
20	Inform the patient.			

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	EXTERNAL BLEEDING CONTROL			
	Aim: Learn how to take measures to stop/limit external bleeding. **Equipment Required:** Gloves, pad, bandage			
		1	**2**	**3**
1	Check if the patient's surroundings are safe before approaching (you will not be able to help the patient if you injure yourself).			
2	Protect yourself from blood-borne infections by wearing gloves.			
3	Apply direct pressure on the wound (cover the wound with a sterile or clean bulky pad and apply pressure by pushing directly on it with both hands).			
4	Apply a bandage to keep the dressing in place.			
5	If the wound is on a limb, raise it in a supported position to reduce blood flow to the injured area.			
6	If a foreign body is embedded in the wound, do not remove it. Apply padding on either side of the object and build it up to avoid pressure on the foreign body.			
7	Keep the patient at total rest.			
8	Seek medical assistance.			

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	PATIENT TRANSPORT WITH A SPINE BOARD			
	Aim: Learn how to transport a patient with a spine board **Equipment Required:** Spine board			
		1	**2**	**3**
1	If possible put on gloves.			
2	Look for signs of a spinal injury (If you suspect a spinal injury to the back or neck of a person in need of help, do not move him or her if there is no immediate need to).			
3	Determine how many bystanders are available to log roll. • A minimum of at least two people are needed to log roll an injured person in an emergency-one stabilize the neck/head, and the other to stabilize the lower spine/pelvis Five/six people is the ideal number to log roll in most situations in order to stabilize the neck, head, arms, low back, pelvis, and legs.			
4	First rescuer ; the team leader; should maintain manual inline stabilization of head and neck.			
5	Other team members should hold and stabilize the arms/thoracic spine, lumbar spine/pelvis and legs around the knees.			
6	Second rescuer applies cervical collar.			
7	Get the spinal board ready by positioning it right next to the side you are planning on lifting off the ground.			
8	Coordinate the log roll. Keeping the cervical spine inline, the patient is rolled onto an uninjured site when the leader at the head of the patient initiates the roll with count of 3.			
9	Back is palpated to evaluate any spinal column injuries by the other team members.			
10	The backboard is brought into place in the position the patient was in.			
11	The patient is rotated back onto his back in position on the backboard.			
12	The patient is secured to the backboard.			
13	The patient's pulse, movement and sensations must be reassessed.			

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	APPLYING ELASTIC BANDAGE			
	Aim: Learn how to apply an elastic bandage **Equipment required:** Appropriate elastic bandage			
		1	**2**	**3**
1	Inform the patient about the procedure.			
2	Select a bandage of proper size and material (Generally use a narrower bandage for wrapping the foot, lower leg, hand, or arm and a wider bandage for the thigh or trunk).			
3	Perform hand hygiene and put on gloves, if indicated.			
4	Examine the area to be wrapped for lesions or skin breakdown (Elastic bandages should not be used over an open wound).			
5	Position the patient with the body part to be bandaged in normal functioning position.			
6	Hold the bandage with the roll facing upward in one hand and the free end of the bandage in the other hand.			
7	Unroll the bandage as you wrap the body part in a spiral or spiral-reverse method.			
8	Begin wrapping an extremity at the most distal park and work proximally to promote venous return.			
9	As you wrap, check the patient if he/she feels comfortable (Do not wrap too tightly for safe circulation).			
10	Secure the end with clips or tape if needed.			
11	Check the circulation after bandaging.			

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	ARTERIAL BLOOD GAS SAMPLING			
	Aim: Learn how to take an arterial blood gas **Equipment Required:** Gloves, pre-heparinized arterial blood gas syringe, arterial blood gas needle, alcohol wipe, gauze, tape			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure.			
4	Gain patient consent.			
5	Place the patient on their back, lying flat.			
6	Locate the radial artery by performing the Allen test for collateral circulation, identify the site.			
7	Perform hand hygiene, put on gloves.			
8	Disinfect the sampling site on the patient with alcohol and allow it to dry.			
9	Assemble the needle and heparinized syringe.			
10	Hold the syringe and needle like a dart, use the index finger to locate the pulse, then insert the needle at a 45 degree angle.			
11	Advance the needle into the radial artery until a blood flashback appears, then allow the syringe to fill to the appropriate level.			
12	Withdraw the needle and syringe; place a clean, dry piece of gauze over the site and apply firm pressure to stop the bleeding.			
13	Label the sample syringe.			
14	Dispose all used materials, remove gloves.			
15	Perform hand hygiene.			
16	Check the site for bleeding. Transport the sample immediately to the laboratory.			

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	SUTURING (Performing a simple interrupted suture)			
	Aim: Learn how to perform a simple interrupted suture **Equipment Required:** Suturing set, needle holder, toothed forceps, scissors, suture, drape, gloves.			
		1	**2**	**3**
1	Confirm patient identity and allergies.			
2	Explain procedure and gain consent.			
3	Prepare supplies. Perform hand hygiene *(Skip this step in exercise).* Put on sterile gloves *(Skip this step in exercise).* Clean wound with antiseptic solution *(Skip this step in exercise).* Place a drape *(Skip this step in exercise).* Assess for analgesia *(Skip this step in exercise).*			
4	Load your needle holder by placing the needle in the tip of the holder**,** two-thirds of the distance from the tip to the thread.			
5	**Plan** the entry and exit of your suture on either side of the wound. The suture should lie perpendicularly across the wound with equal depth and distance from the wound edge.			
6	Gently lift the skin with the forceps and pierce the skin surface with the needle perpendicular (90°) to the skin at approximately 4mm from the wound edge.			
7	Supinate your wrist so that the needle passes through the dermis and rises out of the middle of the wound.			
8	Use your forceps to hold the needle whilst you release your needle holder.			
9	Re-grasp the needle in the same place with your needle holder.			
10	Lift the opposing skin edge gently with your forceps.			
11	This time the needle has to travel perpendicularly through the dermis from inside to outside. Use the curvature of the needle and supinate your wrist to move the needle through the skin. Equal needle bites of depth and distance from the wound should be taken to allow wound edges to oppose equally and neatly.			
12	Again, use your forceps to grasp the needle and pull it through the skin. You should continue to follow the curvature of the needle as it travels through the skin, pulling the suture through as you go. You should now have a suture crossing perpendicularly to the wound, approximately 4mm from the wound edge.			
13	Again, use your forceps to grasp the needle and pull it through the skin. You should continue to follow the curvature of the needle as it travels through the skin, pulling the suture through as you go. You should now have a suture crossing perpendicularly to the wound, approximately 4mm from the wound edge.			
14	Pull the suture through so there is approximately 3cm of length on the opposing side.			
15	Hold the suture in your non-dominant hand and the needle holder in your dominant hand.			
16	Loop the suture away from you around the needle holder twice, then grasp the suture end with your needle holder. Pull the needle holder towards you and push your non-dominant hand away to lay the first knot.			
17	Let go of the suture with your needle holder but keep hold of it in your non-dominant hand.			
18	Now loop the suture back towards you around the needle holder once and grasp the suture end with your needle holder. Push the needle holder away from you and bring your non-dominant hand towards you to lay the second knot.			
19	Once the knot is tied, use the needle holder to pull the knot to one side so it is not overlying the wound.			
20	Now cut the suture between 5-6mm in length. If it is too short the knot will come undone. If it is too long, the suture material will become trapped within other knots and they will come undone.			
21	Dispose of your sharps immediately in a sharps bin.			
22	The wound should be washed and dried, then dressed appropriately.			

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	NASOGASTRIC TUBE INSERTION			
	Aim: Learn how to insert a nasogastric tube **Equipment Required:** Nasogastric tube, gloves, lubricant, gauze, large syringe, stethoscope, drainage bag, plaster			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure .			
4	Gain patient consent.			
5	Wash hands.			
6	Give the patient Fowler position.			
7	Measure the tube from the tip of the patient's nose, loop around their ear and then down to roughly 1-2 inch below the xiphoid process (55-65 cm).			
8	Mark the measured length with a marker.			
9	Gather a cup of water.			
10	Put an apron on the patient.			
11	Put on gloves.			
12	Check the nostrils for any deformity, obstruction.			
13	Lubricate 2-4 inches of the distal part of the tube with lubricant.			
14	Insert the tube parallel to the base of the nose, then back and down until the posterior wall of the pharynx.			
15	Make the patient flex the head and ask to swallow while inserting the tube.			
16	In case of resistance you should rotate the tube.			
17	In case of respiratory distress, irritation, withdraw it.			
18	Insert the tube until the marked length.			
19	Put a syringe to the free end of the tube and aspirate for any gastric content for Ph test (if no chance you may inject 50 ml air into the tube and hear the bubbling sound on the epigastrium with the stethoscope).			
20	Discard the gloves.			
21	Secure the tube with tape on the nose.			
22	Connect the tube with a drainage bag or clamp it, and may stabilize it on the shoulder of the patient.			
23	Discard all the supplies.			
24	Perform hand hygiene.			

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	URINARY CATHETERIZATION			
	Aim: Learn how to insert a Foley catheter **Equipment Required:** Urinary catheter, sterile gloves, lubricant, sterile drape, povidone iodine, sterile gauzes, drainage system, 10-mL syringe with water for catheter balloon inflation			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure to be administered.			
4	Check for latex allergy.			
5	Gain patient consent.			
6	Assist patient into supine position with legs spread and feet together.			
7	Open catheterization kit and catheter.			
8	Prepare sterile field , apply sterile gloves.			
9	Check balloon for patency.			
10	Coat the distal portion (2-5 cm) of the catheter with lubricant.			
11	Apply sterile drape.			
12	If female, separate labia using non-dominant hand. If male, hold the penis with the non-dominant hand. Maintain hand position until preparing to inflate balloon.			
13	Pick up catheter with gloved (and still sterile) dominant hand.			
14	In the male, lift the penis to a position perpendicular to patient's body and apply light upward traction (with non-dominant hand).			
15	Identify the urinary meatus and gently insert until 1 to 2 inches beyond where urine is noted.			
16	Inflate balloon, using correct amount of sterile liquid (usually 10 cc but check actual balloon size).			
17	Gently pull catheter until inflation balloon is snug against bladder neck			
18	Connect catheter to drainage system, secure catheter to abdomen or thigh, without tension on tubing.			
19	Place drainage bag below level of bladder.			
20	Evaluate catheter function and amount, color, odor, and quality of urine.			
21	Remove gloves, dispose of equipment appropriately, wash hands.			
22	Document size of catheter inserted, amount of water in balloon, patient's response to procedure, and assessment of urine.			

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	LUMBAR PUNCTURE			
	Aim: Learn how to do lumbar puncture **Equipment Required:** Lumbar puncture (LP) needle, sterile gauze, antiseptic solution, sterile gloves, sterile field, manometer, local anesthetic, syringe and needles for local anesthetic administration, sample collection containers, adhesive bandage, pen for marking the planned insertion site			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure to be administered.			
4	Gain patient consent.			
5	Wash and dry your hands.			
6	Position the patient appropriately (Lying on their side in a fetal position; ask the patient to flex forwards whilst bringing their knees up towards their chest).			
7	Palpate the space between L3-L4 or L4-L5 vertebrae and mark it.			
8	Put on sterile gloves.			
9	Clean the insertion site and the surrounding area thoroughly using antiseptic solution and allow to dry.			
10	Apply a sterile drape with an opening over the site of insertion.			
11	Draw up the local anesthetic and then replace the drawing needle with a new for the injection.			
12	Inject local anesthetic around the site and allow time for it to take effect.			
13	Hold the LP needle so that it is in your palm.			
14	Insert the LP needle and advance it slowly in direction of umbilicus with bevel facing upwards.			
15	You will pass skin, subcutaneous tissue, supraspinous ligament, interspinous ligament, ligamentum flavum, dura mater, subdural space, and arachnoid mater sequentially.			
16	Remove style and see if CSF flows out.			
17	When CSF flows out, take guide out and insert manometer.			
18	Observe CSF rising in manometer. The level it stops is the CSF opening pressure.			
19	Put 1-2 mL of CSF into culture tube.			
20	Put 1-2 mL into other appropriate laboratory containers .			
21	Once all samples are taken, withdraw needle.			
22	Press on puncture site with a sterile tampon.			
23	Fixate sterile tampon tightly with adhesive bandage.			
24	Gather supplies and throw in red waste bag.			
25	Take off gloves and wash your hands.			
26	Explain to the patient that the procedure is now complete and advise them to lay flat for at least the next 30 minutes.			

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	USING A BAG VALVE MASK			
	Aim: Learn how to use a bag valve mask **Equipment Required:** Bag-valve apparatus, face mask, oxygen source, oxygen tubing, airway, gloves			
		1	**2**	**3**
1	Wear gloves			
2	Place the patient into a proper sniffing position (Proper sniffing position aligns the external auditory canal with the sternal notch). If there is concern for cervical spine injury, avoid moving the neck; use only the jaw-thrust maneuver or chin lift to facilitate opening of the upper airway			
3	Select a proper mask (Fits over the mouth and nose but spares the eyes)			
4	Insert an oropharyngeal airway (unless the patient has a gag reflex)			
Two-person mask technique: *The more experienced operator handles the mask, the second operator squeezes the bag.*				
5	Stand at the head of the person, and have the second operator stand to the side			
6	Use both hands, hold the mask between your thumbs and index fingers placed on either side of the connector system. First place the nasal portion of the mask over the nose. Next lower the mask over the chin.			
7	Cover the bridge of the nose, the two malar eminences, and the patient's lower lip by the mask to achieve a proper seal. Traditional hand placement is the "C-E" grip, placing the middle, ring, and little fingers (the "E") under the mandible and pulling the mandible upward, while the thumbs and index fingers create a "C" and then press down against the mask.			
8	Be sure to pull up only on the bony parts of the mandible, because pressure to the soft tissues of the neck or under the chin may obstruct the airway.			
9	Once a proper seal is achieved, have the second operator attach the bag to the mask and begin ventilation.			
One person mask technique				
10	Using one hand, hold the mask, with your thumb and index finger wrapped around the connector stem of the mask. Most operators use their nondominant hand to grasp the mask, but either hand can be used as long as a good mask seal can be maintained.			
11	Making sure not to place your hand or the mask on the patient's eyes, first place the nasal portion of the mask over the nose, and then lower the body over the patient's mouth. The bridge of the nose, the 2 malar eminences, and the mandibular alveolar ridge must be covered by the mask in order to achieve a proper seal.			

12	Now extend your middle, ring, and little fingers underneath the patient's mandible, and pull it upward into the mask. This maneuver is similar to that of the head tilt–chin lift technique and further opens the airway.			
13	While maintaining this upward traction on the mandible, press the mask downward onto the face to attain a tight mask seal. If your hand is large enough, place your little finger behind the mandibular ramus to do a jaw-thrust maneuver to further open the airway			
14	Be sure to pull up only on the bony parts of the mandible, because pressure to the soft tissues of the neck or under the chin may obstruct the airway.			
15	Once a proper seal is achieved, use your other hand to begin ventilation.			
Bag ventilation and oxygenation				
17	For each breath, steadily and smoothly squeeze the bag to deliver a tidal volume of 6 to 7 mL/kg (or about 500 mL for an average size adult) over 1 second, and then release the bag to allow it to reinflate. If using a 1000-mL volume bag, squeeze only halfway to obtain the correct tidal volume.			
18	Observe for proper chest rise during ventilations; in practice, you can use a tidal volume just large enough to cause the chest to rise.			
19	Monitor the patient, checking breath sounds and, if possible, end-tidal carbon dioxide and pulse oximeter			
20	If ventilation or oxygenation is still not adequate, prepare for other airway maneuvers such as a supraglottic airway or endotracheal intubation.			

CLASS III

SCORING GUIDE	
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	PREPARING TO INITIATE AN INTRAVENOUS INFUSION			
	Aim: Learn how to prepare to initiate an intravenous infusion **Equipment Required:** Infusion set (plastic spike, drip chamber, flow regulator, tubing adapter, PVC tubing), IV solution bag			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details and check the prescription chart (Note the type of fluid, volume, and time to be given over).			
3	Explain the procedure and ask about known allergies			
4	Gain patient consent.			
5	Perform hand hygiene, put on gloves.			
6	Prepare and inspect the IV equipment (IV solution bag: check expiration date, check solution clarity, check for presence of punctures) (Infusion set: check for sterility and expiration date, do not touch any part of the catheter that enters the skin/vein.)			
7	Remove the outer packing of the infusion bag and hang it on a drip stand.			
8	Open the infusion set and close the flow control using the roller-ball clamp on the line.			
9	Remove the cover from the port on the infusion bag by twisting and breaking it off.			
10	Remove the cover from the tubing spike and insert it into the IV solution port with a quick twist.			
11	Squeeze the drip chamber until it is half full.			
12	Remove the protective cap from the tubing adapter and open the flow regulator clamp allowing the fluid to flush all of the air from the tubing. Ensure on bubbles are in the line.			
13	Re-close the flow-regulator clamp and recap the tubing adapter.			
14	Decontaminate your hands and remove gloves.			

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	BLOOD TRANSFUSION			
	Aim: Learn how to arrange and administer a blood transfusion safely			
		1	**2**	**3**
	Collecting the initial blood sample			
1	Perform hand hygiene, put on gloves.			
2	Confirm patient details (ask the patient to tell you their name and then compare this to their identify bracelet to make sure they match)			
3	Perform venipuncture to collect a blood sample			
4	Ensure the blood sample has the correct date/timing/labeling (fill out the patient's details onto the blood bottle at the bedside immediately after taking the sample); send the sample to the blood bank.			
5	Obtain informed consent and health history			
	Prescribing the blood transfusion			
6	Each unit of blood should be prescribed separately; the prescription should include the time, date of the infusion, and indication for the transfusion.			
7	Checking the blood transfusion			
8	Verify blood product (by two different person) • Patient's name, date of birth, medical record number • Patient's blood type versus the donor's blood type and Rh-factor compatibility (check the blood group and serial number on blood bag matches the compatibility report) • Blood expiration date and time • The blood bag (for signs of tampering, leaks, clots, discoloration)			
	Administering the blood transfusion			
9	Perform hand hygiene, put on gloves.			
10	Obtain large bore IV access			
11	Assess and document the patient's baseline vital signs (HR, RR, Temp, SPO2, BP)			
12	Attach the giving set to the blood bag and run some blood through the tubing to expel any air			
13	Attach the other end of the giving set to the cannula port			
14	Set the rate at which the blood should be transfused (run the blood slowly for the first 15 minutes and remain with the patient for the first 15 minutes that most transfusion reactions can occur)			
15	Document the time and date the transfusion was started			
16	Monitoring the patient during the blood transfusion			
17	Document vital signs (0,15, 30 mins from the onset of the transfusion)			
18	Look for any of the transfusion reactions (allergic, febrile, GVHD, TRALI)			
	After the transfusion			
19	Dispose of relevant equipment into a clinical waste bin, wash your hands			

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	SURGICAL HAND SCRUP			
	Aim: Learn the procedure for surgical hand washing **Equipment Required:** chlorhexidine gluconate or povidone iodine solutions, sterile disposable scrub brush			
		1	**2**	**3**
1	Don all personal protection equipment. Remove rings, chipped nail polish and watch.			
2	Inspect the integrity of the hands and arms to rule out presence of infection. Inspect nail and cuticles.			
3	Open the brush and place in a convenient location.			
4	Turn on the water and adjust temperature.			
5	Wet hands and arms, apply antiseptic, and lather to 2 inches above the elbow.			
6	Obtain nail cleaner. Clean each nail and cuticles under running water			
7	Rinse hands and arms.			
8	Keep hands above the elbows and keep elbows bent to allow water to run off the elbow.			
9	Obtain the scrub brush; wet and lather.			
10	Begin scrubbing the first hand's nails and cuticles 30 brush strokes.			
11	Scrub each finger 10 strokes by diving it into four planes			
12	Progress in an orderly fashion to ensure that all surfaces receive adequate chemical exposure and mechanical action. Add water and soap as needed.			
13	Scrub the hand by dividing it into four planes; use circular motion strokes.			
14	Divide the arm into three sections. Divide each section into four planes and scrub individually using 10 circular strokes.			
15	Continue to 2 inches above elbow			
16	Rinse brush and transfer to the other hand, and repeat the process			
17	Discard the brush; rinse one arm from the fingertips to the elbow, keeping the elbow bent.			
18	Repeat rinse on the opposite arm, allow excess water to drip into sink.			
19	Using a sterile towel dry the finger tips 5 cm above elbow. Use one side of towel to dry one hand and other side of the towel to dry other hand.			

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HISTORY TAKING				
Aim: To obtain an accurate, comprehensive history from the patient and perform a rational, thorough physical exam				
		1	**2**	**3**
1	Introduce yourself, identify your patient and gain consent to speak with them.			
2	Write down your name, last name, and time and date of examination.			
3	Obtain and write demographic data of the patient (age, gender, marital status, number of children).			
4	Ask patient's chief complaint and write it down in their own words.			
5	Take a history of presenting complaint (site, onset, character, radiation, associations, time course, exacerbating/relieving factors, severity) and write it down.			
6	Ask past medical history and write it down.			
7	Ask drug history (name, dosage), and allergies and write them down.			
8	Ask family history and write it down.			
9	Ask social history (smoking, alcohol, drug addiction) and write it down.			
10	Gather a short amount of information regarding the other systems in the body that are not covered in the history of presenting complaint and write it down.			
11	Make a summary to the patient for any misunderstandings or errors.			
BASIC PHYSICAL EXAMINATION				
	Equipment Required: Stethoscope			
1	Wash your hands.			
2	Evaluate patient as a whole (general appearance, vital signs, evaluation of each system with inspection, palpation, percussion, and auscultation) and write it down.			

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	TAKING ANAMNESIS AND PREPARING A PATIENT FILE			
	Aim: Learn the steps of filling a patient file, apply it correctly and in sequence on the model **Equipment Required:** Examination room, examination table, clean cloth, pillow, blank file, necessary writing tools, stethoscope, gloves, sphygmomanometer, thermometer, watch, negatoscope			
		1	**2**	**3**
1	Introduce yourself to the patient including your name and role.			
2	Check the patient's hospital admission paper.			
3	Sit and face the patient at eye level. Use active listening skills, try to use open-ended questions that encourage a more comprehensive response.			
4	Explain that you'd like to take a history from the patient and gain consent.			
5	Ask the patient's demographic characteristics (name, surname, age, gender, place of birth) and note the patient's occupation, address, telephone number, marital status, blood group, and number of child, if any.			
6	Ask patient's chief complaint that caused them to apply to the clinic and write it down in their own words.			
7	Take a history of presenting complaint (site, onset, character, radiation, associations, time course, exacerbating/relieving factors, severity) and write it down.			
8	Ask past medical history and write it down.			
9	Ask drug history (name, dosage), and allergies and write them down.			
10	Ask family history and write it down.			
11	Ask social history (smoking, alcohol, drug addiction) and write it down.			
12	Gather a short amount of information regarding the other systems in the body that are not covered in the history of presenting complaint and write it down.			
13	Make a summary to the patient for any misunderstandings or errors.			
14	Record patient's vital signs.			
15	Perform and record systemic examination of the patient , including height and weight.			
16	Perform and record the local examination of the patient regarding the main complaint (abdominal examination, breast examination,…).			
17	Review the radiological examinations of the patient and record (date, results).			
18	Review the laboratory tests of the patient and record (date, results).			
19	Review the other examinations (endoscopic, nuclear medicine, ….) of the patient and record (date, results).			
20	List the prediagnosis or diagnosis, and explain it to the patient in a language that they could be understand and record them.			
21	Inform the patient about the next process.			
22	Record the radiological, endoscopic, laboratory, and other examinations requested with the requested dates.			
23	Record the requested consultations regarding the process with the request dates.			
24	Sign the record with date			

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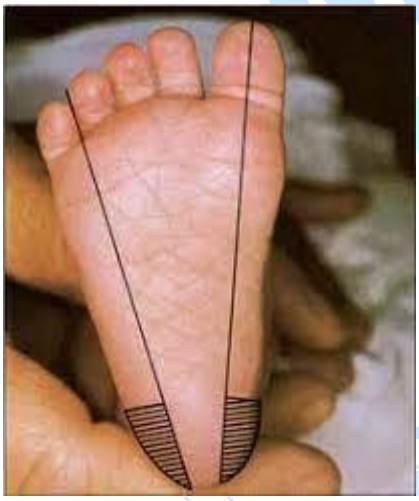
	HEEL PRICK SCREENING			
	Aim: Learn how to obtain an adequate and valid blood sample from the heel **Equipment Required:** Sterile lancet, sterile alcohol, sterile cloth, soft cloth, blood example filter paper, gloves			
		1	**2**	**3**
1	Fill in all the information on the Blood Sample Filter Paper			
2	Perform hand hygiene, put on gloves.			
3	Gently warm the heel area (shaded area) for a few minutes with a soft cloth moistened with warm water. 			
4	Clean the area with an alcohol preparation(cotton/sponge, etc.). Then dry with sterile gauze.			
5	Pierce the heel at the appropriate place.			
6	Wipe the first drop of blood with sterile gauze			
7	Touch the resulting large drop of blood to the filter paper. Have the drop fill the entire ring with one tap			
8	Fill the remaining rings (if there is a decrease in the amount of blood drops repeat the procedure)			
9	Dry the blood sample filter paper on a dry, clean, flat and horizontal surface for at least 4 hours.			
10	After drying, store the filter paper in a clean, cool and dry place in an envelope or box until it is sent to the relevant center.			

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	INTRAOSSEOUS (IO) ACCESS			
	Aim: Learn how to obtain an intraosseous line access **Equipment Required:** alcohol swabs, 18G needle with trocar, 5 mL syringe, 20 mL syringe, infusion fluid, gloves, local anesthetic			
		1	**2**	**3**
1	Obtain informed consent			
2	Select site (proximal tibia, distal tibia, distal femur)			
3	Perform hand hygiene, put on sterile gloves			
4	Disinfect the overlying skin of the designated site and provide local anesthetic as desired			
5	Be sure the stylet is in place on the needle prior to insertion			
6	Insert the needle through the skin, perpendicular and down to the bone with a screwing motion.			
7	Remove the trocar and confirm the position by aspirating bone marrow through a 5 mL syringe (marrow cannot always be aspirated but it should flush easily)			
8	Secure the needle and start the infusion			
9	All medications should be followed by a 20 mL saline flush			

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	BREAST - SELF EXAMINATION			
	Aim: Learn to perform Breast Self-Examination **Equipment Required:** Breast Self-Examination model			
		1	**2**	**3**
	Inspection			
1	Stand facing a mirror with your arms at your side			
2	Look at your breasts directly and in the mirror make a general inspection of both breasts			
3	inspect each breast for any asymmetric findings, especially abnormalities in the overall shape and outline			
4	inspect each breast for changes in skin color, edema, changes in skin texture, such as dimpling, puckering, / retractions, or skin that looks like an orange peel			
5	inspect the nipples any nipple abnormalities like presence of spontaneous nipple discharge, inversion, fissures and scaling			
6	Raise your arms over your head and repeat the same inspections			
7	Put your hands on your hips, firmly pressed against the hips and repeat the same inspections			
8	Lean forward while your hands are on your hips and repeat the same inspections.			
	Breast palpation			
9	Lay down on your back.			
10	Place your **right hand** behind your head.			
11	With the palmar surface of the middle 3 fingers of your **left hand**, gently but firmly press downward using a small circular motion to examine the entire **right breast** including the periphery, tail and axilla			
12	Place your **left hand** behind your head**.**			
13	Repeat the same process on your **left breast** with your **right hand fingers (process is as step 11)**			
14	Stand or sit and palpate your breasts while you are standing or sitting			
	Palpation of the areas surrounding the breasts			
15	Palpate the axillary lymph nodes			
16	Palpate the cervical, supraclavicular, infraclavicular and parasternal lymph nodes			

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	GYNECOLOGICAL EXAMINATION AND APPLYING A SPECULUM			
	Aim: Learn how to perform gynecological examination and apply a speculum **Equipment Required:** Pelvis model, light source, gloves, speculum			
		1	**2**	**3**
1	Inform the patient about the procedure and obtain permission for pelvic examination.			
2	Ask patient to urinate if she hasn't done so recently.			
3	Ask the patient to prepare for the exam and have them lie in lithotomy position.			
4	Check the light source.			
5	Put on gloves			
6	Let the patient know what you are going to do and do not startle her.			
7	Inspect the external genital organs. • Labia majora, labia minora, clitoris, perineal area and mons pubis • Check for symmetry			
8	Pull the labia apart with your thumb and 2nd finger and assess the vestibulum, vaginal and urethral orifices			
9	Superficially palpate the vulva, especially the Bartholin glands			
10	Choose an appropriate speculum			
11	Make sure the speculum is not too warm or too cold.			
12	Make sure the valves of the speculum are closed			
13	Tell patient to relax and lightly do a Valsalva maneuver.			
14	Hold the speculum in your active hand and separate the labia with your other hand.			
15	Hold the speculum oblique to the vaginal introitus and push it downwards with a 45 degree angle while rotating it clockwise.			
16	Assess the vaginal canal while advancing the speculum.			
17	After assessing the anterior and posterior fornices and visualizing the cervix, fixate the speculum so that the valves are in the anterior and posterior fornices.			
18	Carefully evaluate the cervix.			
19	If needed, take a sample for discharge and a smear.			
20	Loosen the speculum, turn it counterclockwise and pull it out, keeping the long edges of the valves perpendicular to the vagina.			
21	Inform the patient before attempting the bimanual examination.			

22	Tell patient to relax and slowly advance the 2nd and 3rd fingers of your right hand into the vagina (wear a glove with lubricant on it).			
23	Place your left hand on the abdomen with fingers together and lightly flexed; press on abdomen with your palm.			
24	Palpate vaginal walls, fornices, cervix and cervical orifice.			
25	Move the cervix and check for cervical motion tenderness.			
26	Press on the abdomen with your left hand while your other hand pushes the cervix and the body of the uterus upwards.			
27	Determine position, size, texture, contours, and mobility of uterus and check if patient reports tenderness.			
28	Turn your fingers in the vagina so that your palm faces upwards and place them in the right lateral fornix; with your left hand, press on those fingers from the outside to assess adnexa.			
29	Assess mobility and presence of tenderness or mass by palpating adnexa.			
30	Repeat on the opposite side.			
31	Gently pull your fingers out of the vagina to end the procedure.			
32	Take off your gloves and throw them in the medical waste bin.			
33	Inform the patient that the examination is over.			
34	Wash your hands.			

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	VAGINAL DELIVERY			
	Aim: Learn how to perform vaginal delivery on a vaginal birth model **Equipment Required:** Vaginal birth model, gloves.			
		1	**2**	**3**
1	Wash your hands and arms up to the elbows appropriately and dry them.			
2	Put on sterile clothes and gloves			
3	When delivering the head, take a sterile drape in your right hand and hold it by the coccyx to support the chin when lifting it up from the perineum. With your other hand, apply pressure to ensure that the fetal head is delivered slowly. This is called the Ritgen maneuver.			
4	Deliver the fetal head.			
5	After the head is delivered turn it towards the right or left leg and bring the fetal shoulders to the anteroposterior plane in the pelvis. This movement of the head is called external rotation.			
6	Hold the head between your hands and apply traction downwards to deliver the anterior shoulder from under the pelvic arch.			
7	Apply traction upwards to deliver the posterior shoulder.			
8	The rest of the fetal body usually delivers spontaneously. However, in some situations, traction may be needed. Traction should be applied in the direction of the fetal long axis and pressure should also be applied to uterine fundus to assist delivery. Traction should not be applied to the shoulders as this can lead to brachial plexus injuries.			
9	As soon as the fetus is delivered, wipe its face by applying pressure on its chin and aspirate its mouth and nose.			
10	Apply two clamps to umbilical cord and then cut it. The fetus should not be above the level of the introitus during this procedure.			
11	Hand baby to team and wait for delivery of placenta. When the placenta separates, there will be light bleeding and the umbilical cord will extend downwards. Deliver placenta with light traction and fundal massage. Make sure not to apply excessive traction.			
12	Check the placenta to see if it is intact.			
13	Check cervix, vagina and perineum and apply sutures if necessary.			
14	Wash your hands			

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	TAKING INFORMED CONSENT			
	Aim: Learn to obtain informed consent in cases of laparoscopic appendectomy, splenectomy, and orchiectomy/total hysterectomy. **Equipment Required:** Printed blank informed consent forms			
		1	**2**	**3**
1	Speak with the patient in a respectful manner			
2	Attempt to establish rapport with the patient			
3	Use language the patient could easily understand			
4	Explain the reason(s) for the surgical operations			
5	Explain the procedure of the surgical operations to the patient			
6	Explain the risks of the surgical operations to the patient			
7	Explain the benefits of the surgical operations to the patient			
8	Explain alternatives to performing the surgical operations at this time to the patient			
9	Explain the benefits and risks of alternative medical/surgical treatment methods to the patient			
10	Try to make sure that the patient understood the information given to him/her about the surgical operations.			
11	Listen carefully to any questions the patient had about the surgical operations.			
12	Seem to understand how the patient felt about the issues they discussed.			
13	Address concerns of the patient about confidentiality.			
14	Explain the medical staffs who would have in the surgical operations room to the patient.			
15	Try to make sure that the patient did not feel pressured to have the surgical operations.			
16	Compline with the legal and ethical principles during the informed consent process.			

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	BLOOD AND BODY FLUID CULTURE COLLECTION			
	Aim: Learn how to perform blood culture test **Equipment Required:** A procedure tray, gloves, tourniquet, 10-20 ml injector, extra sterile injector needle, blood culture bottles (x2, anaerobic, aerobic), cleaning swab (x3 ,2% chlorhexidine in 70% isopropyl alcohol), sterile gauze, plaster			
	Preparation (Decontaminate your hands; Clean the procedure tray with appropriate aseptic agent, allow to dry; Gather the rest of the equipment into the tray) Move to the patient's bedside			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure, gain patient consent.			
4	Decontaminate your hands			
5	Position the patient's arm (Make sure the patient is in a comfortable position and that the arm is supported appropriately)			
6	Apply a tourniquet, about 4–5 finger widths above the selected venipuncture site (The median cubital vein in the antecubital fossa is commonly used for venipuncture) Once you have identified a suitable vein you may need to temporarily release the tourniquet, as it should not be left on for more than 1-2 minutes at a time.			
7	Remove the blood culture cap			
8	Clean the blood culture bottle top using 2% chlorhexidine in 70% isopropyl alcohol wipe			
9	Repeat the process for the second bottle			
10	Replace the tourniquet. Don your gloves			
11	Disinfect the selected site with 2% chlorhexidine in 70% isopropyl alcohol using circular motion and allow to dry. Do not touch the site once alcohol or other antiseptic has been applied.			
12	Unsheathe the needle of the injector.			
13	Anchor the vein from below with your non-dominant hand by gently pulling on the skin distal to the insertion site.			
14	Warn the patient that they will experience a sharp scratch.			
15	Insert the needle through the skin at a 30-degree angle, with the bevel facing upwards.			
16	Take 10 to 20 ml blood.			
17	Release the tourniquet			
18	Withdraw the needle and then apply gentle pressure to the site with some gauze or cotton wool			
19	Apply a dressing to the patient's arm.			
20	Discard the needle of the injector and attach the new sterile needle to inject the blood into the culture bottles.			
21	Transfer 5-10 ml blood to the aerobic and anaerobic bottles (for pediatric samples 4-5 ml is acceptable).			
22	Dispose of the needle into a sharps container.			
23	Discard the used equipment into the appropriate clinical waste bin.			
24	Remove your gloves and wash your hands.			
25	Document the patient's details on the blood sample bottles			
26	Send the blood samples to the lab.			
27	Inform the patient about the aftercare and thank the patient			

*You can use the same procedures for the other body fluid samples.

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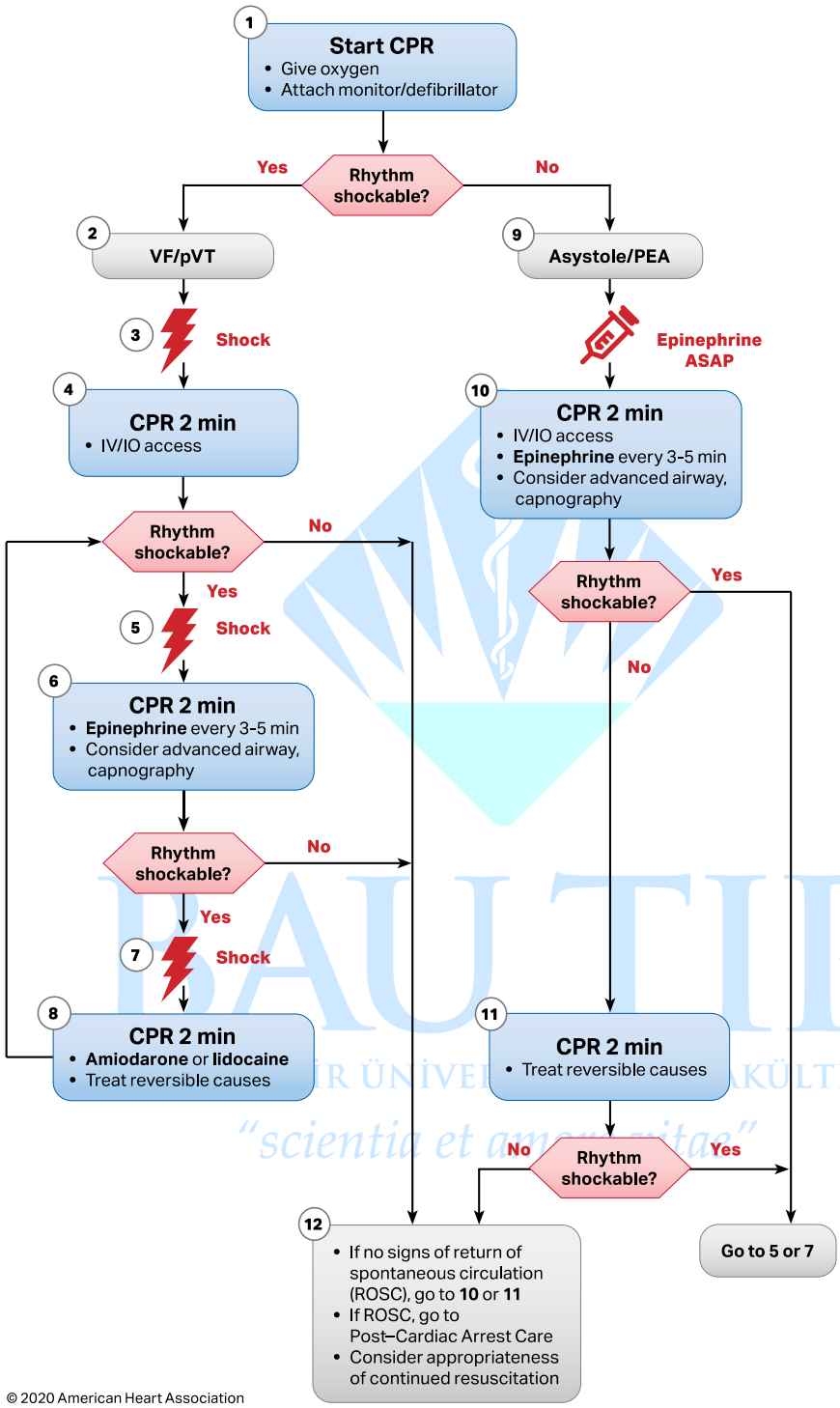
	ADULT ADVANCED LIFE SUPPORT			
	Aim: Learn how to treat cardiac arrest, bradycardia and tachycardia as a team **Equipment Required:** ACS manikin, Defibrillator, Bag mask, airway, Intubation set, LMA, medicines			
		1	**2**	**3**
1	Assign team member roles			
2	Start CPR			
3	Ensure high-quality CPR at all times • Push hard (at least 2 inches-5 cm-) and fast (100-120/min) and allow complete chest recall • Minimize interruptions in compressions • Avoid excessive ventilation • Change compressor every 2 minutes or sooner if fatigue • If no advanced airway, 30:2 compression-ventilation ratio • Quantitative waveform capnography -If ETCO2 is low or decreasing, reassess CPR quality			
4	Start oxygen			
5	Attach monitor/defibrillator			
6	Maintain IV/IO access			
7	Recognize the rhythm			
8	**If the rhythm is shockable (VF/pVT) perform defibrillation** • Biphasic • Monophasic			
9	Maintain appropriate cycles CPR 2 min-rhythm check/shock-CPR 2 min-drug therapy • Epinephrine IV/IO dose: 1 mg every 3-5 minutes • Amiodarone IV/IO dose: First dose:300 mg bolus, second dose:150 mg or • Lidocaine IV/IO dose: First dose:1-1.5 mg/kg, second dose:0.5-0.75 mg/kg			
9	Maintain advanced airway • Endotracheal intubation or supraglottic advanced airway • Capnography to confirm and monitor ET tube placement • Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions			
10	If the rhythms is Asystole/PEA, CPR 2 min, epinephrine every 3-5 min			
11	Treat reversible causes • **H**ypovolemia • **H**ypoxia • **H**ydrogen ion (acidosis) • **H**ypo-/hyperkalemia • **H**ypothermia • **T**ension pneumothorax • **T**amponade, cardiac • **T**oxins • **T**hrombosis, pulmonary • **T**hrombosis, coronary			
12	Identify return of spontaneous circulation (ROSC) • Pulse and blood pressure • Abrupt sustained increase in PETCO2 • Spontaneous arterial pressure waves with intra-arterial monitoring			
13	If ROSC, go to Post-Cardiac Arrest Care Consider appropriateness of continued resuscitation			

Adult Cardiac Arrest Algorithm



CPR Quality

- Push hard (at least 2 inches [5 cm]) and fast (100-120/min) and allow complete chest recoil.
- Minimize interruptions in compressions.
- Avoid excessive ventilation.
- Change compressor every 2 minutes, or sooner if fatigued.
- If no advanced airway, 30:2 compression-ventilation ratio
- Quantitative waveform capnography
  - If P_{ETCO_2} is low or decreasing, reassess CPR quality.

Shock Energy for Defibrillation

- **Biphasic**: Manufacturer recommendation (eg, initial dose of 120-200 J); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- **Monophasic**: 360 J

Drug Therapy

- **Epinephrine IV/IO dose:** 1 mg every 3-5 minutes
- **Amiodarone IV/IO dose:** First dose: 300 mg bolus. Second dose: 150 mg.
  or
  Lidocaine IV/IO dose: First dose: 1-1.5 mg/kg. Second dose: 0.5-0.75 mg/kg.

Advanced Airway

- Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement
- Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in P_{ETCO_2} (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

Reversible Causes

- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen ion (acidosis)
- **H**ypo-/hyperkalemia
- **H**ypothermia
- **T**ension pneumothorax
- **T**amponade, cardiac
- **T**oxins
- **T**hrombosis, pulmonary
- **T**hrombosis, coronary

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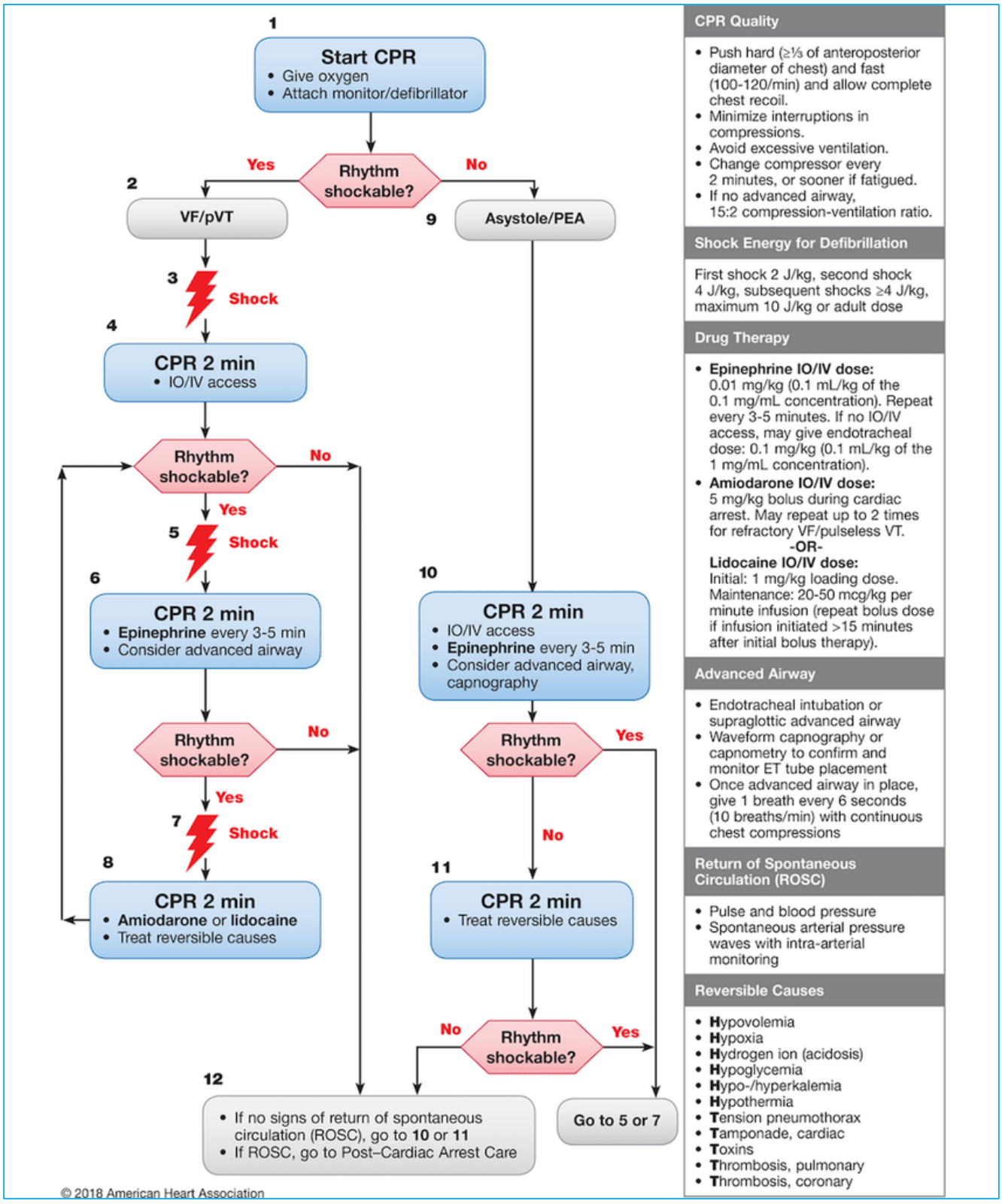
	PEDIATRIC ADVANCED LIFE SUPPORT			
	Aim: Learn how to perform advanced life support on pediatric patient model **Equipment Required:** Pediatric patient model, Defibrillator, IV access, Medicines			
		1	**2**	**3**
	Recognize cardiac arrest/bradycardia, continue pediatric basic life support until the advanced life support team arrives.			
1	Attach defibrillator/monitor and assess the rhythm.			
2	If the rhythm is non-shockable (pulseless electrical activity, asystole, bradycardia) in the absence of signs of life, high quality CPR is needed.			
3	Obtain vascular access and give adrenaline IV (10 mcg/kg, max 1 mg) as soon as possible. Flush after each drug delivery. Repeat adrenaline every 3-5 min.			
4	During CPR provide bag-mask ventilation with 100% O2 and consider an advanced airway and capnography. Ventilate at a rate of 25 (infants)- 20(1-8 years), 15(8-12 years), 10 (≥ 12 years) per minute. And correct the reversible causes of cardiac arrest.			
5	If the rhythm is shockable (pVT, VF) defibrillation should immediately be attempted.			
6	Give the first shock (2 J/kg) and immediately resume CPR for 2 minutes with minimal interruptions. Reassess the cardiac rhythm every 2 min and give another shock (4J/kg) if a shockable rhythm persists.			
7	After the third shock give adrenaline (10mcg/kg, max 1 mg) and amiodarone (5 mg/kg, max 300 mg) IV/IO or Lidocaine IV (1 mg/kg). Flush after each drug.			
8	Give a second dose of adrenaline (10 mcg/kg, max 1 mg) and amiodarone (5 mg/kg, max 150 mg) after the 5th shock if the child still has a shockable rhythm. Once given adrenaline should be repeated every 3-5 min.			
9	For refractory VF/ pvt (≥ 6 shocks) advance the shock dose (max 8J/kg-max 360J).			
10	If there are 2 rescuers change the person doing compressions at least every 2 min.			
11	CPR should be terminated in the presence of spontaneous circulation and any life sign identified clinically or by the monitors.			


1
Start CPR
• Give oxygen
• Attach monitor/defibrillator
Rhythm shockable?
Yes
No
2
VF/pVT
9
Asystole/PEA
3
Shock
4
CPR 2 min
• IO/IV access
Rhythm shockable?
No
Yes
5
Shock
6
CPR 2 min
• Epinephrine every 3-5 min
• Consider advanced airway
Rhythm shockable?
No
Yes
7
Shock
8
CPR 2 min
• Amiodarone or lidocaine
• Treat reversible causes
10
CPR 2 min
• IO/IV access
• Epinephrine every 3-5 min
• Consider advanced airway, capnography
Rhythm shockable?
Yes
No
11
CPR 2 min
• Treat reversible causes
Rhythm shockable?
No
Yes
12
• If no signs of return of spontaneous circulation (ROSC), go to 10 or 11
• If ROSC, go to Post–Cardiac Arrest Care
Go to 5 or 7
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CPR Quality
• Push hard (≥⅓ of anteroposterior diameter of chest) and fast (100-120/min) and allow complete chest recoil.
• Minimize interruptions in compressions.
• Avoid excessive ventilation.
• Change compressor every 2 minutes, or sooner if fatigued.
• If no advanced airway, 15:2 compression-ventilation ratio.
Shock Energy for Defibrillation
First shock 2 J/kg, second shock 4 J/kg, subsequent shocks ≥4 J/kg, maximum 10 J/kg or adult dose
Drug Therapy
• Epinephrine IO/IV dose: 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration). Repeat every 3-5 minutes. If no IO/IV access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration).
• Amiodarone IO/IV dose: 5 mg/kg bolus during cardiac arrest. May repeat up to 2 times for refractory VF/pulseless VT.
-OR-
Lidocaine IO/IV dose: Initial: 1 mg/kg loading dose. Maintenance: 20-50 mcg/kg per minute infusion (repeat bolus dose if infusion initiated >15 minutes after initial bolus therapy).
Advanced Airway
• Endotracheal intubation or supraglottic advanced airway
• Waveform capnography or capnometry to confirm and monitor ET tube placement
• Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions
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Reversible Causes
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• Hypoglycemia
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	ASSESSING DEEP TENDON REFLEXES WITH A REFLEX HAMMER			
	Aim: Learn how to assess deep tendon reflexes with a reflex hammer **Equipment Required:** A reflex hammer			
		1	**2**	**3**
1	Introduce yourself to the patient.			
2	Confirm patient details.			
3	Explain procedure, gain patient consent.			
4	Have the patient sit up on the edge of the examination bench with one hand on top of the other, arms and legs relaxed. Instruct the patient to remain relaxed.			
5	**The biceps reflex:** The brachioradialis reflex is observed by striking the brachioradialis tendon directly with the hammer when the patient's arm is resting. Strike the tendon roughly 3 inches above the wrist. Note the reflex supination. Repeat and compare to the other arm.			
6	**The triceps reflex:** The triceps reflex is measured by striking the triceps tendon directly with the hammer while holding the patient's arm with your other hand. Repeat and compare to the other arm.			
7	**The knee jerk reflex:** With the lower leg hanging freely off the edge of the bench, the knee jerk is tested by striking the quadriceps tendon directly with the reflex hammer. Repeat and compare to the other leg.			
8	**The ankle reflex:** The ankle reflex is elicited by holding the relaxed foot with one hand and striking the Achilles tendon with the hammer and noting plantar flexion. Compare to the other foot.			