King Saud University

College of Medicine
Medical Education Department

STUDENT'S GUIDE OF CLINICAL SKILLS

Foundation Block

(FOUND 111)

(Academic year 1437-1438)

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Introduction and rationale:

Early students' clinical exposure to skills is essential for systematically learning and developing clinical skills appropriate to working in a clinical environment, and application of skills when they move onto their clinical rotations.

The transition from preclinical to clinical training is huge for the students and several studies have documented that the transition is quite stressful. (O'Brien et al., 2007).

We aim from the clinical skills to do a smooth transition in clinical skills from preclinical to clinical years.

The clinical skills took in consideration the requirement of SaudiMed for the graduates of Saudi medical students through integration with the different blocks and courses.

The clinical skills will be learnt through spiral approach system to gradually increase students' confidence in performance when interacting with patients during their clinical years.

The aims of early clinical skills teaching:

1. improvement in the students' **knowledge and competence** to perform examinations
2. Increased student's perceived levels of **confidence**.
3. Enrichment of the **safe environment** that helps in bridging the gap between the preclinical and clinical years in medical undergraduate education. ***(Swamy et al., 2013)***

Objectives of the clinical skills:

By the end of this block the students should be able to know and show how:

1. To take a history emphasize on the essential components of a medical history and the steps of taking a history
2. To localize the radial pulses on anatomical basis
3. Test the radial pulse and comment on the rate/regularity
4. To list the different routes for taking the temperature
5. To show how to take the temperature from different routes.
6. To show how to take respiratory rate
7. To show how to take the bloods pressure accurately how to identify the Korotkoff sound.
8. To show how to take Height, weight and calculate the BMI

Week 1: Taking a history from healthy person:

Objectives:

1. Know and show how to take a history emphasize on the essential components of a medical history and the steps of taking a history
2. Know and show how to communicate during interviewing the simulated patient.

(E.g. Welcome patient, use patient's name, clinician introduction of him/herself, Ensure patient, readiness and privacy, Remove communication barriers, Establish patient comfort)

Week 2: Vital signs 1: Radial pulse and temperature and respiratory rate:

Objectives:

1. Know and show how to localize the radial pulses on anatomical basis
2. Know and show how to test the radial pulse and comment on the rate/regularity
3. To list the different routes for taking the temperature
4. Know and show how to take the temperature from different routes.
5. Know and show how to take respiratory rate

Week 3: Vital signs 1: Blood pressure

Objectives:

To show how to take the bloods pressure accurately how to identify the Korotkoff's sound.

Week 5: height, weight, BMI

Objectives:

To show how to accurately measure height, weight and calculate the BMI

Teaching and Learning Modes:

1. The clinical skills will be learnt by hands on the different clinical skills.
2. The tutor will do a demo in front of students, and then each student is expected to do by himself
3. The tutor will give feedback to the students according to the provided checklists

Mode of assessment: 5 marks

Final assessment (5 marks)

The students will expose to 3-6 OSCE stations by the end of the block.

The OSCE stations are expected to be structured according to the provided templates

The staff will evaluate the students for each station according to a structured checklists and the final marks of OSCE is out of 5

Learning Resources:

1. The clinical skills tutor
2. The clinical skill lab facilities during SDL (need to be arranged with the clinical skill staff in advance)
3. The provided checklists
4. Recommended reference textbooks and website:

- Physical Exam by Barbara Bates
- Current Medical Diagnosis
- Current Surgical Diagnosis

Website:

-Martindales Clinical Examination (martindalecenter.com

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Checklists

Week 1
History Taking

OBJECTIVE: **To conduct history taking on a patient.**
MATERIALS: **Well illuminated room, examination table or comfortable chair.**

D: Appropriately done PD: Partially done ND: Not done/Incorrectly done

	STEP/TASK	D	PD	ND
	Preparation			
1.	Greet the patient and introduce yourself.			
2.	Explain the procedure, reassure the patient and get patient's consent.			
3.	Make sure the patient is in a comfortable position sitting or lying down.			
4.	Maintain good eye contact and establish rapport with the patient.			
	HISTORY			
	Personal Information			
5.	Ask for the patient's Name, Age, Gender, Occupation, Nationality, and Address.			
	Presenting Complaint:			
6.	Ask the patient about the main problems that made him/her went to see the doctor.			
	History of Present Illness			
7.	Allow the patient to provide an account of recent events in his/her own words without interruption.			
8.	Describe onset, course, duration; precipitating, radiating, and aggravating factors; and associated signs and symptoms. (Use the SOCRATES, in case of pain) Important associated symptoms , risk factors , and if previously investigated for the same problem Ask the patient about history of any chronic problems like(DM, HTN , renal , or cardiac diseases ……) when diagnosed , medications , follow up and any complication related to the chronic disease			
	Past Medical History			
9.	Ask about any similar episodes in the past.			
10.	Ask about previous hospitalizations, allergy, blood transfusion, and trauma history.			
	Family History			
11.	Ask about significant illness in the family. Similar illness in the family.			
	Personal and Social History			
12.	Occupation , education , socioeconomic status Ask about use of alcoholic beverages, cigarette smoking or illicit drugs.			
13.	Ask politely about emotional problems at home or at work.			
	Obstetric and Gynecologic History (if patient is female)			

14.	Ask about the LMP (last menstrual period), regularity and quality of menstruation. Ask age of menopause if patient is elderly.			
15.	Ask about number of pregnancy, abortion, number of children, and history of complications during pregnancy.			
	Systemic Review *(inquiry about all the cardinal symptoms in each of the major systems)*			
16.	Cardio-respiratory symptoms • Ask about having cough, shortness of breath, chest pain, ankle swelling, etc.			
17.	GIT symptoms • Ask about having weight loss, nausea or vomiting, changes of bowel movement, abdominal pain, etc.			
18.	Neurological symptoms • Ask about having headache, dizziness, ringing in the ears, changes in hearing, vision, smell or taste, etc.			
19.	Urinary and Reproductive symptoms • Ask about having burning on passing urine, frequency of urination, blood in the urine, etc. • Ask about having penile or vaginal discharge, hesitancy or urgency of urination, poor urine stream or dribbling, etc.			
20.	Dermatologic symptoms • Ask about having skin rashes, redness, or itchiness, etc.			
21.	Musculoskeletal symptoms • Ask about having joint pain or stiffness, muscle pain or weakness, etc.			
	Closing			
22.	Make explanations to the patient, answer questions and discuss management plan. If appropriate, order diagnostic investigations *(e.g. ultrasound scan, CBC, LFTs, etc.).*			
23.	Ensure that the patient is comfortable.			
24.	Thank the patient. Wash hands and document the procedure.			

Weeks 2 and 3

Vital signs

العناوين بالأحمر للقراءة فقط

Contents

Hand hygiene

Hand hygiene is considered to be the primary measure necessary for reducing Health care-associated infection (HCAI). Although the action of hand hygiene is simple, the lack of compliance among health-care workers continues to be a problem throughout the world.[1,2]

Hand hygiene is an important component of any infection control program. Its primary purpose is the mechanical removal of transient microorganisms from the skin of HCWs, preventing cross infection from contaminated hands. Increased frequency of hand hygiene procedures is associated with decreased transmission of micro-organisms and a reduction in the incidence of health-care-associated infections.[3]

To prevent contamination, health-care workers clean their hands (1) before touching a patient, (2) before clean/aseptic procedures, (3) after body fluid exposure/risk, (4) after touching a patient and (5) after touching patient surroundings.[1,2]

Liquid antiseptic-soap is the most common agent for hand washing. These liquid soaps contains different chemical agents such as ethanol, isopropanol, chlorhexidine, hexachlorophene, triclosan etc.[1]

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Hygienic Hand Washing

OBJECTIVE: To perform a proper hygienic hand washing to remove or destroy transient micro-organisms and reduce resident flora.

MATERIALS: Clean water, anti-microbial liquid soap (e.g. chlorhexidine, iodine and iodophors, chloroxylenol [PCMX], triclosan) clean paper towel.

***D**: Appropriately done **PD**: Partially done **ND**: Not done/Incorrectly done*

	STEP/TASK	D	PD	ND
	Preparation			
1.	Assemble all the materials to be used.			
2.	Remove jewelleries *(watch, bracelet, ring etc.)* and move sleeves up over the wrist.			
3.	Stand in front of the sink, preventing the uniform from touching the sink.			
	Procedure *(Duration of the entire procedure: 40-60 seconds)*			
4.	Wet your hands with water.			
5.	Apply (2-4 ml) anti-microbial liquid soap and make lather by rubbing it firmly between your hands.			
6.	Wash your hands thoroughly: **A.** Rub hands palm to palm. **B.** Rub right palm over left dorsum with interlaced fingers and vice versa. **C.** Palm to palm with finger interlaced. **D.** Back of fingers to opposing palms with fingers interlocked. **E.** Rotational rubbing of right thumb in clasped left palm and vice versa. **F.** Rotational rubbing backwards and forward with clasped fingers of right hand over palm and vice versa.			
7.	Rinse hands with water *(Do not shake water from hands).*			
8.	Dry hands thoroughly with a single use paper towel. *(Use towel to turn off hand operated handle faucets)*			
9.	Discard the paper towel in the appropriate container.			

Personal Protective Equipment (PPE)

Standard Precautions are basic infection control precautions in health care and should be applied routinely in all health-care settings when providing care for all patients. If these basic precautions are not in place, additional specific precautions will not be effective. The main elements of Standard Precautions include hand hygiene, use of personal protective equipment (PPE) to avoid direct contact with patient's blood, body fluids, secretions and non-intact skin, prevention of needle stick/sharp injury and cleaning and disinfection of the environment and equipment.[4]

Appropriate Attire includes: Head cap, face mask, eye goggles, face shield, gown and gloves.

Health-care waste and waste disposal

Health-care waste includes all the waste generated by health-care establishments, research facilities, and laboratories. In addition, it includes the waste originating from "minor" or "scattered" sources - such as that produced in the course of health care undertaken in the home (dialysis, insulin injections, etc.).[5]

Appropriate handling, treatment, and disposal of waste by type reduces costs and does much to protect public health. Segregation should always be the responsibility of the waste producer, should take place as close as possible to where the waste is generated, and should be maintained in storage areas and during transport. The same system of segregation should be in force throughout the country.[5]

Color- coding Scheme for Containers and Bags

Color	Type of Waste	Example Type of wastes
BLACK	**Non-risk health care dry and wet waste**	Paper, tissue paper, plastic, food, cups, Feeding formula bottles NOT contaminated *(with blood/ body fluids)* syringe, PPE, IV fluids
ORANGE	**Infectious, Anatomical & Pathological waste**	**Anatomical Wastes:** Animal carcasses blood, body fluids, teeth, tissues, organs, placenta, non viable foetuses etc. **Pathological Wastes:**Thermometer probe, Nasogastric & Endotracheal tube, Foley Catheter &urinary bag, Drain tubes **CONTAMINATED** *(with blood/ body fluids)* syringe, PPE, IV fluids
YELLOW	**Sharps waste**	Slides, broken vials and ampoules, lancets, scalpels, blades and needles *(syringe with needle, cannula needles, butterfly needles)*

Donning of Personal Protective Equipment

OBJECTIVE: To perform a proper donning of personal protective equipment to prevent the transmission of microorganisms between patients and the healthcare providers.

MATERIALS: Cap, disposable gown, face mask, eye goggles, clean gloves.

***D**: Appropriately done **PD**: Partially done **ND**: Not done/Incorrectly done*

	STEP/TASK	D	PD	ND
	Preparation			
10.	Assemble all the materials to be used.			
11.	Wash your hands *(refer to hygienic hand washing checklist)*.			
	Donning a cap			
12.	Pick up and unfold a cap.			
13.	Apply the cap to your head *(Make sure to tuck hair under the cap).*			
	Donning a gown			
14.	Select appropriate type and size.			
15.	Pick up and unfold gown with opening at the back.			
16.	Wear the gown. *(Make sure **NOT** to touch the outer surface of the gown).*			
17.	Fasten the neck tie at the back.			
18.	Fasten the waist tie at the back.			
	Donning a mask			
19.	Find the flexible nose piece with wire and place it over your nose bridge.			
20.	Fasten the top tie at the back of your head.			
21.	Fasten the lower tie at the top of your head *(adjust to fit comfortably).*			
	Donning an eye goggles *(if necessary)*			
22.	Put goggles over your eyes *(adjust to fit comfortably).*			
	Donning clean gloves *(Hands should be washed and fingernails should be short)*			
23.	Select appropriate size.			
24.	Pick up a clean glove and insert -*first one hand then the other hand*- into the gloves. *(Make sure to extend gloves over gown cuffs).*			

Removing of Personal Protective Equipment

OBJECTIVE: To perform a proper removal of personal protective equipment to prevent contamination.

***D**: Appropriately done **PD**: Partially done **ND**: Not done/Incorrectly done*

	STEP/TASK	D	PD	ND
While removing, make sure NOT TO TOUCH THE OUTER SURFACE of the Personal Protective Equipment				
	Removing the gloves			
1.	Grasp the outside edge of one of the gloves.			
2.	Peel it away from your hand turning the glove inside out.			
3.	Hold and crumple it in your gloved hand.			
4.	Slide your ungloved hand's finger under the wrist of the remaining glove.			
5.	Peel it away from your hand turning the glove inside out *(creating a bag for both gloves)*.			
6.	Dispose waste material according to infection control standards.			
	Removing the eye goggles *(if present)*			
7.	Lift the goggle from your face.			
8.	Dispose waste material according to infection control standards. *(If applicable, place it in designated receptacle for reprocessing).*			
	Removing the gown			
9.	Unfasten the neck and the back ties.			
10.	Slide your right hand's *(3 or 4)* fingers under the left sleeve of the gown.			
11.	Slightly pull the left sleeve.			
12.	Hold the right sleeve on the outside and peel gown away from your shoulder and neck.			
13.	Roll the gown into a bundle.			
14.	Dispose waste material according to infection control standards.			
	Removing the mask			
15.	Unfasten the lower tie first and then the top tie.			
16.	Remove the mask away from your face.			
17.	Dispose waste material according to infection control standards.			
	Removing the cap			
18.	Slide your both hand's *(2,3 or 4)* fingers inside the cap.			
19.	Remove the cap away from your head.			
20.	Dispose waste material according to infection control standards.			
21.	Wash your hands *(refer to hygienic hand washing checklist)*.			

Preparing the patient for examination

An accurate physical examination is best performed when the examination conditions are ideal. This means taht, if possible, the patient should be in a well-lit room (preferably daylight) from which distracting noises and interruptions have been excluded (rarely possible in busy hospital wards). Screens must be drawn around patients before they are examined. Consulting rooms and outpatient clinics should be set up to ensure privacy and comfort for patients.[6]

Before starting the examination, students/doctors should introduce themselvs to the patient then ask patient's name (*check first and last name and the patient's name band if present*).

The examination should not begin until the nature of the examination has been explained and permission has been asked of the patient.[6]

Patients have a right to expect that students and doctors will have washed their hands before they perform an examination. This is as important in clinics and surgeries as in hospital wards.[6]

Vital Signs

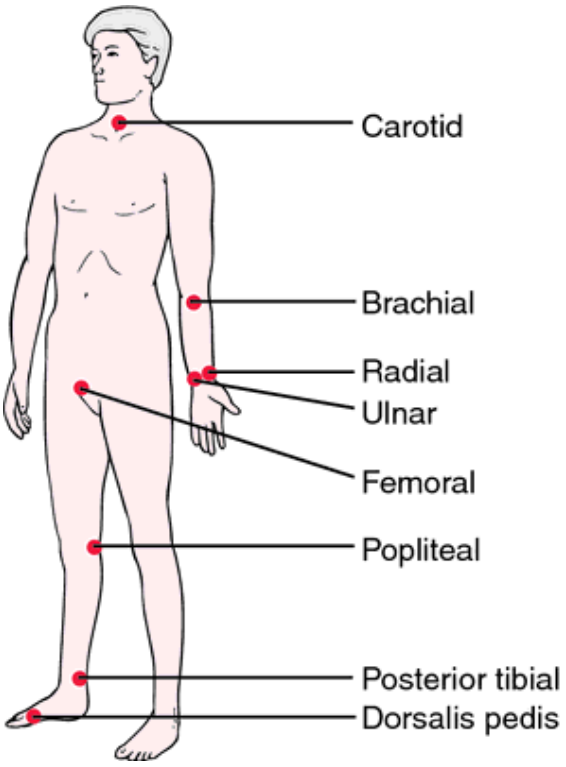
Certain important measurements must be made during the assessment of the patient. These relate to primarily cardiac and respiratory function and include pulse, blood presseure, temperature and respiratory rate.[7]

The arterial pulse

Patients expected to have the pulse taken as a part of proper medical examination.[8] Besides, examining peripheral pulses is an essential part of the medical examination. When this traditional part of examination (taking pulse) is performed with some ceremony, it may help to establish rapport between patient and doctor.[8]

The most common arteries examined during the medical examination are radial, brachial and carotid arteries. However other peripheral pulses should also be examined: ulnar, femoral, popliteal, posterior tibialis and dorsalis pedis.

The pulse is usually felt just medial to the radius, using the middle fingr pulps of the examining hand. The following observations should be made: (i) rate of pulse, (ii) ryhthm and (iii) presence or absence of delay of the femoral pulse compared with the radial pulse (*radiofemoral delay*).[8]



Pulse rate (PR)

Pulse rate (PR) is the number of pulses per unit of time, and Heart rate (HR) is the number of heartbeats per unit of time, both typically expressed as beats per minute (bpm). Heart rate is measured by finding the pulse of the body. This pulse rate can be measured at any point on the body where the artery's pulsation is transmitted to the surface by pressuring it with the index and middle fingers; often it is compressed against an underlying structure like bone. The thumb should not be used for measuring another person's heart rate, as its strong pulse may interfere with correct perception of the target pulse.

The more common sites are:

1. The neck (carotid artery) (Fig 1).
2. The inside of the elbow, or under the biceps muscle (brachial artery) (Fig 2).
3. The ventral aspect of the wrist on the side of the thumb (radial artery) – *the most common site* (Fig 3).
4. The ulnar artery (Fig 4).
5. The groin (femoral artery) (Fig 5).
6. Behind the medial malleolus on the feet (posterior tibial artery) (Fig 6).
7. Middle of dorsum of the foot (dorsalis pedis) (Fig 7).
8. Behind the knee (popliteal artery) (Fig 8).[9]

Normal resting heart rate

The chart below shows the normal range of a resting heart rate (pulse rate after resting 10 minutes) in beats per minute, according to age. Many things can cause changes in your normal heart rate, including your age, activity level, and the time of day.

Resting heart rate	
Age	**Beats per minute (bpm)**
Babies to age 1:	100-160
Children ages 1 to 10:	70-120
Children ages 11 to 17:	60-100
Adults	60-100

The palpation of pulses

Figure 1: Palpating carotid artery.

Figure 2: Palpating brachial artery.

Figure 3: Palpating radial artery.

Figure 4: Palpating ulnar artery.

Figure 5: Palpating femoral artery.

Figure 6: Palpating posterior tibial artery.

Figure 7: Palpating dorsalis pedis artery.

Figure 8: Palpating popliteal artery.

Respiratory rate (RR)

Respiratory rate (RR) is the number of breaths per minute or, more formally, the number of movements indicative of inspiration and expiration per unit time. In practice, the respiratory rate is usually determined by counting the number of times the chest rises or falls per minute.

Why is it done?
We measure the respiratory rate to:

1. Establish baseline data.
2. Monitor respiratory rate, depth, and rhythm.
3. Assess patient for presence of dyspnea or cyanosis.
4. Assess for abnormal lung sounds, such as rales, rhonchi, or wheezes.
5. Note respiratory rate, rhythm, and depth.
6. Note labored, difficult, or noisy respirations or cyanosis.
7. Identify alterations in respiratory pattern resulting from disease conditions.
8. Assess if accessory muscles are used for breathing.

Resting respiratory rate for a normal adult is 12-20 breaths per minute.

Taking the Pulse Rate (PR) and the Respiratory Rate (RR)

OBJECTIVE: To be able to take the pulse rate and respiratory rate accurately.
MATERIALS: Watch or clock with displaying seconds.

***D**: Appropriately done **PD**: Partially done **ND**: Not done/Incorrectly done*

	STEP/TASK	D	PD	ND
	Preparation			
1.	Introduce yourself to the patient.			
2.	Confirm patient's ID.			
3.	Explain the procedure and reassure the patient.			
4.	Get patient's consent.			
5.	Wash hands.			
6.	Prepare the necessary materials.			
	If the patient is anxious, irritable or has been a physically active or if he/she has smoked, drunk stimulant drinks *(tea, coffee, energy drinks etc.)* in the last 30 minutes, give him/her 10 minutes to rest before measuring the BP.			
7.	Position the patient in a sitting position and uncover one of his/her arms. *(Make sure the patient is relaxed and comfortable).*			
	Procedure for Pulse Rate (PR)			
8.	Gently place your two or three fingers (index, middle and ring fingers) on the selected artery. *(Do not use your thumb because it has its own pulse that you may feel).*			
9.	Count the beats for one full minute. Check for the rate , rhythm , character, vessel wall , collapsing pulse Check radio-radial delay Check for radio-femoral delay			
	Procedure for Respiratory Rate (PR)			
10.	Proceed with taking the Respiratory rate (RR) while your hand is still on the patient's radial artery *(**Do not** inform your patient that you are taking the RR).*			
11.	Observe the rise and fall of the patient's chest and count the number of respirations for another one full minute. *(One respiration consists of one complete rise and fall of the chest, or the inhalation and exhalation of air).*			
	After the Procedure			
12.	Ensure that the patient is comfortable.			
13.	Make explanations to the patient, answer his/her questions.			
14.	Wash hands.			
15.	Document the procedure.			

Limits

Pulse Rate (PR)	
Normal*	60-100 *beat per minute*
Bradycardia	< 60 *bpm*
Tachycardia	> 100 *bpm*

Respiratory Rate (RR)	
Normal*	12-20 breaths per minute
Bradypnea	< 12 *bpm*
Tachypnea	> 20 *bpm*

**Normal limits for a resting adult.*

The blood pressure (BP)

Measurment of the arterial blood pressure is an essential part of the examination of almost any patient. Usually, indirect measurment of the systolic and diastolic pressures are obtained with a sphygmomanometer. systolic blood pressure is the peak pressure that occurs in the artery following ventricular systole, and the diastolic blood pressure is the level to which the arterial blood pressure falls duiring ventricular diastole.[10]

To measure blood pressure accurately, you must carefully choose a cuff of appropriate size.

An adult cuff showing size

A cuff for children

The sphygmomanometer may be either the aneroid (with indicator) or the mercury type. Because an aneroid instrument often becomes inaccurate with repeated use, it should be recalibrated regularly.

A free-standing aneroid model.

Portable mercury sphygmomanometer

A classification of blood pressure readings*		
Category	**Systolic (mmHg)**	**Diastolic (mmHg)**
Optimal	< 120	< 80
Normal	120 - 129	80 - 84
High Normal	130 - 139	85 - 89
Mild hypertension (grade 1)	140 - 159	90 - 99
Moderate hypertension (grade 2)	160 - 179	100 - 109
Severe hypertension (grade 3)	> 180	> 110

* *The cardiovascular system. In: Talley NJ, O'Connor S., A systematic guide to physical diagnosis: Clinical Examination. Australia: , 2010;p.56.*

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Measuring Blood Pressure (BP)

OBJECTIVE: To accurately measure the blood pressure using the manual sphygmomanometer.
MATERIALS: Stethoscope and a manual sphygmomanometer.

***D**: Appropriately done **PD**: Partially done **ND**: Not done/Incorrectly done*

	STEP/TASK	D	PD	ND
	Preparation			
1.	Introduce yourself to the patient.			
2.	Confirm patient's ID.			
3.	Explain the procedure and reassure the patient.			
4.	Get patient's consent.			
5.	Wash hands.			
6.	Prepare the necessary materials.			
If the patient is anxious, irritable or has been a physically active or if he/she has smoked, drunk stimulant drinks *(tea, coffee, energy drinks etc.)* in the last 30 minutes, give him/her 10 minutes to rest before measuring the BP.				
7.	Position the patient in a sitting position and uncover one of his/her arms. *(Make sure the patient is relaxed and comfortable).*			
	Procedure			
8.	Turn on the mercury valve *(if it is mercury sphygmomanometer).*			
9.	Select an appropriately sized cuff and apply it to the upper arm ensuring that it fits securely. *(The centre of the cuff bladder must be over brachial artery **[the bladder should cover 80% of the circumference of the upper arm]** and lower edge 2.5 cm above the ante-cubital fossa).*			
10.	Palpate the brachial or radial artery while inflating the cuff till the point where pulsation disappears and keep inflating the cuff 20-30 mmHg more.			
11.	Slowly deflate the cuff, noting the pressure at which the pulse reappears. *(This is the approximate level of the systolic blood pressure).*			
12.	Deflate the cuff completely.			
13.	Place the stethoscope over the brachial artery pulse, ensuring that it does not touch the cuff *(bell is better than diaphragm to pickup low pitched Korotkoff sounds).*			
14.	Re-inflate cuff to 20-30 mmHg above palpated systolic pressure.			
15.	Slowly deflate the cuff at a rate of 2-3 mmHg/second. *(Note where the beats appears in relation to the number on the gauge).*			
16.	The first sound indicates the systolic blood pressure *(continue deflation).*			
17.	The muffling and disappearance of the sound indicate the diastolic blood pressure.			
18.	Deflate the cuff completely.			
19.	Turn off the mercury valve *(if it is mercury sphygmomanometer).*			
	After the Procedure			
20.	Ensure that the patient is comfortable.			
21.	Make explanations to the patient, answer his/her questions.			
22.	Wash hands.			
23.	Document the procedure.			

Temperature

The temperature should always be recorded as a part of the initial clinical examination of the patient. The normal temperature (in the mouth) ranges from 36.6°C to 37.2°C (98°F to 99°F). The rectal temperature is normally higher and the axillary and tympanic temperature lower than the oral temperature. There is a diurnal variation; body temperature is lowest in the morning and reaches peak between 6.00 and 10.00 PM.[10]

Digital themometer

Mercury glass thermometer

Average temperature values*		
	Normal	**Fever**
Mouth	36.8°C	> 37.3°C
Axilla+	36.4°C	> 36.9°C
Rectum	37.3°C	> 37.7°C

+ Tympanic temperature are similar to axillary ones.

** The general principals of history taking. In: Talley NJ, O'Connor S., A systematic guide to physical diagnosis: Clinical Examination. Australia: Elsevier, 2010;p.28.*

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Measuring Body Temperature

OBJECTIVE: To accurately measure body temperature (in the mouth) using a digital thermometer.
MATERIALS: Digital thermometer, disposable probe, cotton gauze, disinfectant solution.

***D**: Appropriately done **PD**: Partially done **ND**: Not done/Incorrectly done*

	STEP/TASK	D	PD	ND
	Preparation			
1.	Introduce yourself to the patient.			
2.	Confirm patient's ID.			
3.	Explain the procedure and reassure the patient.			
4.	Get patient's consent.			
5.	Wash hands.			
6.	Prepare the necessary materials.			
7.	Position the patient in a sitting position *(Make sure the patient is relaxed and comfortable).*			
8.	Put on clean gloves			
	Procedure			
9.	Take the digital thermometer.			
10.	Withdraw probe and observe for test display A digital human icon will appear on the screen)			
11.	State audible tone will sound, then display of probe type:			
12.	Load appropriate probe into probe cover *(**Do not** press ejection button)*.			
13.	Change modes *(oral, axillary or rectal)* by pressing  button.			
14.	Place probe under the tongue reaching the sublingual pocket. *(Holding the probe still will ensure fast and accurate measurement.* *A "Walking cycle" will appear on the display to indicate measurement is in progress.)*			
15.	When final temperature is reached a tone will sound and temperature will be displayed.			
16.	Remove probe by pressing "**ejection button**" and dispose cover according to infection control standards.			
17.	Insert probe in storage channel to clear display.			
18.	Wipe all surfaces with damp *(not wet)* cloth with mild detergent, alcohol or non-staining disinfectant *(**Do not** scratch LCD screen. **Never** autoclave digital thermometer).*			
19.	Put thermometer back in its case.			
	After the Procedure			
20.	Ensure that the patient is comfortable.			
21.	Make explanations to the patient, answer his/her questions.			
22.	Remove the gloves.			
23.	Dispose waste material according to infection control standards			
24.	Wash your hands.			
25.	Document the procedure.			

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WEEK 5

Weight, Height and BMI

Weight, height and Body Mass Index Calculation

OBJECTIVE: To correctly take indices like weight, height and Body mass index (BMI)
MATERIALS: Electronic digital scale, a portable or wall-mounted stadiometer

D: Appropriately done PD: Partially done ND: Not done/Incorrectly done

		D	PD	ND
	Preparation			
1.	Prior to taking the measurements, the patient's identity must be verified by looking at the arm band			
2.	Explain the process and its purpose to the patient			
3.	Accurate weighing and measuring have three critical components: • Technique – standardized and appropriate technique for each measure must be utilized • Equipment – must be calibrated and accurate • Trained measurers – measures should be performed by a trained measurer.			
4.	Get patient's consent.			
	Procedure			
	WEIGHT			
5.	• Set the scale at zero reading • Have the patient remove shoes, heavy outer clothing (jacket) and empty pockets (cell phones, iPods) to the extent possible. • Ask the patient to step on the scale platform, facing away from the scale read out, with both feet on the platform, and remain still with arms hanging naturally at side and looking forward • Read the weight value to the nearest ¼ pound or 0.1 (1/10) kilogram • Have the patient step off the scale and take a second measurement, repeating the steps above (measurements should agree within 0.1 kilogram or ¼ pound; if not, re-measure until this standard is met) • Record the weight value.			
6.	**HEIGHT**			
7.	• Have the patient remove shoes, hat, and hair ornaments /buns /braids to the extent possible. • Ask the patient to stand on the footplate or uncarpeted floor with back against stadiometer rule • Make sure that the student's legs are straight, arms are at sides, and shoulders are relaxed • Assure the back of the student's body touches/has contact with the stadiometer at			

	some point, preferably with heels, buttocks, upper back and head touching the measuring surface. • Assure that the student's body is in a straight line (mid-axillary line parallel to the stadiometer- see the appendix) • Assure the head is in the appropriate position (Frankfort plane) see appendix. • Lower the headpiece until it is touches the crown of the head firmly, compressing the hair • Position yourself so that your eyes are parallel with the head piece and read the measurement to the nearest 0.1 cm • Record the results			
	CALCULATING BMI			
8.	After collecting the student's height and weight, the BMI can be calculated. There are several methods to determine BMI: -BMI Wheel -BMI calculation computer software -Mathematical equation BMI = (weight in kilograms) divided by (height in meters X height in meters) OR BMI = (weight in pounds) divided by (height in inches X height in inches) X 703			
	After recording the measurements			
9.	Analyse the results for any abnormal values (see Appendix).			
10.	Ask the patient to put on his shoes and other accessories if they were removed.			
11.	Ensure that the patient is comfortable and thank him.			
12.	Answer any questions or concerns he/she may have.			

APPENDIX

EQUIPMENT

Accuracy and reliability are the two most critical components of height/weight assessment and are to some degree a function of the quality of the equipment. Equipment must also be properly used and maintained. Quality, easily calibrated and well maintained equipment is a good investment and will provide years of accurate and reliable service.

DEFINITIONS

- BMI or Body Mass Index: a measure of body fat that is the ratio of the weight of the body in kilograms to the square of its height in meters
- Calibration: the use of standard test weights and measuring rods to check the accuracy of equipment
- Height: a standing measurement in inches or meters
- Frankfort Horizontal Plane: imaginary line passing through the external ear canal and across the top of the lower bone of the eye socket, immediately under the eye
- Mid-Axillary Line: an imaginary line through the axilla (armpit) parallel to the long axis of the body and midway between its ventral (front or anterior) and dorsal (back or posterior) surfaces
- Scale: instrument for measuring weight
- Stadiometer: instrument for measuring height

Interpretation of BMI

Adult > 16 years

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal or Healthy Weight
25.0 – 29.9	Overweight
30.0 and Above	Obese

Student Guidelines of CSL

- All students are required to wear their school uniforms, all white or scrub suits plus white coat.
- All students are expected to read about the topic basics before coming to the session so as to be able to comprehend the steps of the skills or the procedure.
- The students are expected to come to the sessions regularly and on time. Students late by more than 10 minutes will not be allowed to join so as not to disturb the ongoing session
- No student will be allowed to leave the session in between and before time
- The students are expected to keep their mobile phones on silent mode while in the session.
- The students are required to sign the attendance sheets posted on their respective rooms, in addition to their log books.
- All the students should carry their log books during the sessions and get it signed by the assigned tutor after the session. In case any student forgets to bring his log book along, he should request the assigned tutor to record his name and year until he gets the log book for the signature the next day.
- All students are expected to practice the skills on an individual basis. For some sessions where individual practice is not feasible due to time and other constraints, groups of students should be asked to perform the skill in a collective manner.
- At the end of each session the tutor should make sure that the student is able to do all the steps correctly, observe him while practicing and assess his performance where necessary.

Helpful Videos:

Blood Pressure Complete procedure:

https://www.youtube.com/watch?v=f6HtqolhKqo&feature=youtu.be

A video to just practice hearing the sounds:

https://www.youtube.com/watch?v=bHXvhOQ0hYc&feature=youtu.be

Clinical skills schedule

Sunday	Monday	Tuesday	Wednesday	Thursday
8:00 - 10:00am	8:00 - 10:00am	8:00 - 10:00 am	8:00 - 10:00 am	8:00 - 10:00 am
10-12 am	10-12 am	10 - 12am	10-12am	10:00 - 12:00 am Clinical skills YEAR 1 Females
Lunch 12:00 – 1:00pm	Lunch 12:00 – 1:00pm	Lunch 12:00 – 1:00pm	Lunch 12:00 – 1:00pm	Lunch 12:00 – 1:00pm
1:00-3:00 pm Clinical skills YEAR 1 Group A	1:00-3:00 pm Clinical skills YEAR 1 Group B	1:00-3:00 pm	1:00-3:00 pm	1:00-3:00 pm