

IMAI second level
learning programme
for district clinicians
working at hospitals
in limited resource
settings

Facilitator guide for the Practical Sessions:

IMAI second-level learning
programme: Quick Check +

-Quick Check Essentials

*-Management of the severely ill
patient with septic shock or
respiratory distress*

These training courses are based on guidelines in the
*IMAI District Clinician Manual:
Hospital Care for Adolescents and Adults*

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Facilitator Guide: Practical sessions

IMAI second-level learning programme:

-Quick Check +

-Management of the severely ill patient with septic shock or
respiratory distress

This guide is for facilitators who conduct the practical sessions for the four training courses (nurses, clinical officers, medical doctors, managers and auxiliary personnel) in the IMAI second level learning programme. These training courses are based on guidelines in the

*IMAI District Clinician Manual:
Hospital Care for Adolescents and Adults*

Produced by IMAI-IMCI Alliance for WHO HSE/PED

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Introduction

OVERVIEW OF TRAINING COURSES

The WHO IMAI second level learning programme is designed for hospital personnel working at district hospitals in limited resource settings. The training courses support the *IMAI District Clinician Manual: Hospital Care for Adolescents and Adults* (DCM) and are intended for hospital teams including clinical staff, auxiliary staff, and hospital managers. This facilitator guide for the practical sessions accompanies the following modules:

- Triage and Emergency Care: Quick Check Essentials*
- Management of the severely ill patient with septic shock or respiratory distress*

Additional information on setting up and integrating these training courses can be found in the *Course director guide: IMAI second level learning programme: Quick Check +*

The clinical training courses for clinical personnel focus on teaching participants to use the Quick Check to triage patients, identify those with emergency signs, provide first-line emergency treatments, and continue the urgent management of these patients. In addition to emergency care, these clinical courses are designed for the critical care management of patients with severe respiratory distress or septic shock in the first 24 hours.

The training course for auxiliary personnel will teach hospital ancillary staff to triage patients, recognize patients with emergency signs and call for help when needed.

The training course for managers will focus on facility organization, leadership, and procurement of supplies.

Day 1	Day 2	Day 3	Day 4	Day 5
IMAI: Training for Nurses: Quick Check Essentials and Management of severely ill patients with septic shock or respiratory distress				Disease Surveillance and Case Reporting
IMAI: Training for District Clinicians: Quick Check Essentials and Management of severely ill patients with septic shock or respiratory distress				
Training for auxiliary personnel: IMAI Quick Check and Triage, IMCI ETAT, obstetrical emergencies				
IMCI: Training for Clinical Staff: Emergency Triage Assessment and Treatment (ETAT+)-paediatric				
			IMAI: Training for Managers: Quick Check Essentials and Management of severely ill patients	

This facilitator’s guide covers the practical sessions which are conducted during the courses. In addition, this guide provides instructions for setting up practical sessions for each course. The **Training Support Set** contains all the materials needed to be photocopied for these sessions.

INTRODUCTION TO THE PRACTICAL SESSIONS

The practical sessions allow participants to practice skills learned in the classroom in a “hands on” setting and reinforce key concepts of the training. They provide an opportunity for participants to practice and develop their skills in a friendly learning environment, before returning to clinical practice where they will need to use these concepts and skills to manage real patients.

Responsibilities of the practical session facilitator

The practical session facilitator works in coordination with the course director to gather, arrange, and set up the materials and equipment needed for the practical sessions. Depending on the number of facilitators available, number of participants, and logistics of the hospital visit the practical session facilitator may be only responsible for the skill stations and EPT cases, or may be involved in also setting up the hospital visits. Your

course director will determine prior to the start of the course how the responsibilities will be divided. Nurses, clinical officers and medical officers can all practice together in one group. Assignments of facilitators to skill stations should be decided prior to start of the course.

Design of practical sessions

Practical sessions for the clinical and auxiliary staff training courses include hands-on problem solving using:

- 1) Skill stations linked to Expert patient-trainer (EPT) case scenarios
- 2) Hospital visits

In the clinical course, the hospital visit provides an opportunity for the participants to triage and manage real patients in a supervised setting using the skills learned in the classroom. The on-site mentoring, which should start after the completion of the course, will allow further supervision / support for participants to continue to develop skills learned in this course.

In the auxiliary staff training course, the hospital visit will provide an opportunity for the participants to practice triaging real patients under the supervision of the facilitators.

In the managers' course, the participants will use the hospital visit to critically look at the flow of patients from triage to the emergency and inpatient wards. The goals are to identify problems or gaps in patient flow, supply management, and strategies for re-organization and budget planning.

During all practice sessions, all facilitators are encouraged to identify any participants, who show leadership skills, and aptitude in teaching / encouraging other participants, as they may be encouraged to develop their facilitating on a future course.

Table 2: Suggested summary of the practical sessions for the 4 day clinical training courses

Day	Modules	Classroom Practical Sessions	Hospital visit
1	<ul style="list-style-type: none"> • Infection control • Quick Check • Airway/Breathing • Circulation 	Card sorts: Quick Check Practical skills: Infection control <ul style="list-style-type: none"> • Hand washing • Standard precautions and preventing needle stick injuries Airway/Breathing <ul style="list-style-type: none"> • Manoeuvres • Devices • Suction • Bag-valve mask ventilation 	
2	<ul style="list-style-type: none"> • Circulation • Consciousness/convulsing • Basic care and monitoring of the severely ill patient 	Practical skills: Airway/Breathing <ul style="list-style-type: none"> • Manoeuvres • Devices • Suction • Bag-valve mask ventilation • Oxygen saturation • Oxygen delivery • Salbutamol <ul style="list-style-type: none"> • Circulation, Convulsions and Consciousness • IV and fluids • Positioning • Diazepam • 	OPD/triage Inpatient
3	<ul style="list-style-type: none"> • Surveillance • Shock • Severe respiratory distress 	Practical skills: Surveillance <ul style="list-style-type: none"> • Put on/take of PPE • Collection of Respiratory Specimen Practical Skills: Shock <ul style="list-style-type: none"> • Vasopressors • Using the Patient Monitoring form 	Emergency ward Inpatient
4	Complete severely ill patient Implementation		Emergency ward and Inpatient Use of patient monitoring form

Classroom Practical Sessions:

Introduction

The objectives, materials and content of each practical skill station are described below, organized by day and by module.

The information presented is intended to provide helpful suggestions and structure for each practical session, but should not limit a creative teacher. The purpose of the practical

sessions is to give information and practice by showing and doing using illustrative case examples. The more that participants are involved with the equipment and have “hands on” participation at the skill stations, the better prepared they will be when they are with real patients.

At skill stations, participants will have a chance to work with unfamiliar equipment and practice new skills learned in the classroom. The skills learned in the classroom practical sessions will be reinforce the clinical encounters participants have during the hospital visits.

Mannequins are helpful and recommended if available, however if they are not available the classroom practical sessions can still be completed.

Scheduling

Practical sessions need to be scheduled on a daily basis so that each group has the time to work separately. Each group’s rotation from station to station needs to be planned prior to the start of the course.

The practical session room

Assign a room (or area) for combined skills / EPT case scenarios.

- The participants should be divided into small groups for practical sessions.
- ***You can chose to either have the equipment and EPT’s set up at specific stations and have the participants rotate to the different areas, or alternatively the EPT’s can rotate and bring the necessary equipment with them to the group.***

The skill stations will include the following:

1. Infection control
 - hand washing, standard precautions and preventing needle sticks
2. Quick Check Triage
 - practice using quick check
3. Airway and Breathing 1
 - use of airway devices and bag valve mask
4. Airway and Breathing 2
 - pulse oximetry
 - give oxygen and titrate
 - give salbutamol for wheezing
5. Circulation
 - manage haemorrhage and give intravenous fluids
6. Altered Consciousness/Convulsions
 - give diazepam
 - safe movement of patient with suspected spinal injury)
7. Shock
 - Resuscitation of patient in shock
 - Administering vasopressors

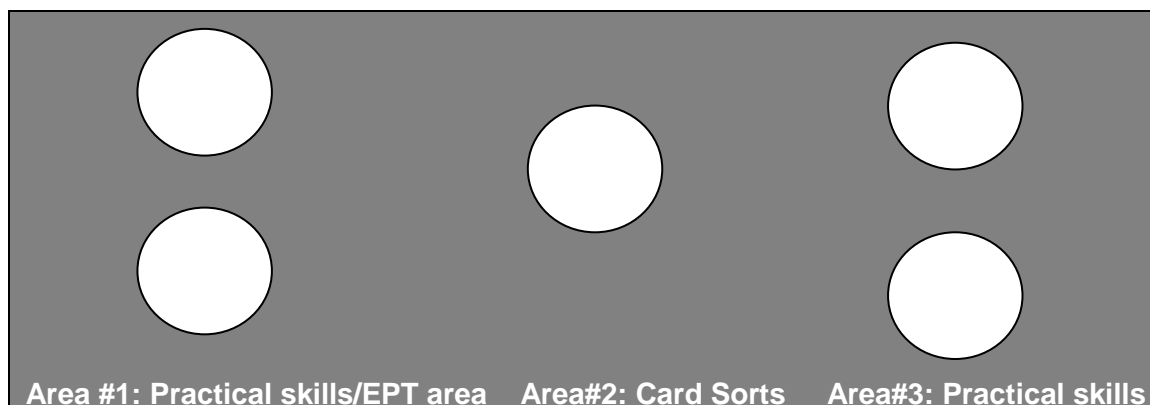
8. Severe respiratory distress

- Assessment and management of patient in severe respiratory distress

9. Disease surveillance and case reporting

- Personal Protective Equipment (PPE)
- Collection of respiratory specimen

Figure 1: Setting up the practical session room



Materials needed for the practical sessions:

Prior to the start of the course (or skill station day if you have limited equipment), gather all necessary materials for the practical skill sessions. Depending on availability of equipment, making separate boxes / bags for different EPT cases may save time.

For skill stations:

EQUIPMENT

- Adult mannequin or doll (if available)
- Emergency trolley (place to show where all emergency equipment is kept – see DCM; copy available in the Training Tools Package/Reusable folder)
- Table or blanket to place on floor or hospital stretcher if available
- Bag valve mask[BVM] (adult and child)
- Nasal airway in at least 2 different sizes
- Oral airway in at least 2 different sizes
- Pulse oximeter with probes – At least 2 required
- Non-crush oxygen tubing
- Nasal cannula (prongs)
- Face mask
- Face mask with reservoir (non-rebreather)
- Salbutamol MDI (may use empty MDI)
- 2 half-litre plastic cola bottles (one that is not cut and one that is cut out to create the spacer)
- Oxygen mask with nebulizer attachment (if available)
- Gauze
- Tape or ribbon
- Sheets (3) (to wrap pelvis/femur)
- Boards for splinting extremities
- 2-3 IV angiocatheters (at least 16-18 gauge)
- 3 (1 L) normal saline or lactated ringers bags with tubing

- Watch with second hand or clocks (to count pulse)
- BP cuff with manometer and stethoscope (if available)
- Cervical collar or local materials (newspaper, towels, tape) to immobilize spine
- Spinal board
- IV mock diazepam
- Mock epinephrine ampoules (2)
- Mock dopamine ampoule (1)
- 200 ml bags of normal saline (2)
- Syringes (of different sizes)
- Needle
- Sharps container
- Alcohol-based hand rub –Enough for each group to have 1
- Scrub suit
- Gowns
- Plastic apron
- Gloves
- Surgical masks
- Face shields/ Eye goggles
- Head cover
- Tongue depressor
- Sterile swabs
- Plastic vial (to collect the respiratory specimen)
- Flip chart/ White board and markers
- Patient monitoring forms (form available in **Training Support Set** folder for photocopy)
- Copies of EPT cases for EPTs (available in **Training Support Set** folder)
- Wall charts: Quick Check, Emergency Treatments, PPE, Handwashing, Severely Ill patient tables (available in **Training Support Set** folder)

If available, demonstrate for skill stations. If unavailable, demonstrate during the hospital visit:

- Oxygen cylinder
- Oxygen concentrator
- Oxygen splitter
- Nebulizer
- Suction apparatus with foot pump

How to run the classroom practical sessions:

The skill stations will use equipment and case examples to illustrate the critical concepts. When applicable, the skill station will be combined with EPT cases.

It is recommended that most of the demonstrations occur at the start of the skill stations or in class. This will ensure that participants have hands-on practice with the equipment during skill stations, then later during the hospital visits, time to focus on real patient care.

- Gather participants and demonstrate the skill, describing the steps in the correct order.
- At the end of the demonstration, give participants an opportunity to ask questions before they begin practicing.
- Check participant knowledge by asking them to repeat steps, as necessary.
- Provide immediate feedback and correct any mistakes.
- Ensure that hand washing and PPE are considered for each case

The equipment should be made available throughout the course if possible in a secure location, so that the participants have opportunities for further practice during breaks and between sessions. Card sort exercises can be done during the skills station when participants are waiting to practice skills or role-play cases with EPTs. Card sorts should be used while participants are in-between the skills and EPT areas.

What are EPTs?

Expert patient-trainers (EPT) are people trained to portray real patients through clinical case scenarios. They help train health workers. Although not essential for this course, EPTs can help participants practice emergency skills learned in the classroom. Prior to the start of the course EPTs should be selected and trained to role-play the clinical cases. In other IMAI courses, EPTs have been PLHIV who portray patients in case scenarios relating to HIV. In this course, they can be real patients or people from the community who have been trained to role-play emergency encounters. They should also be trained to assess participants based on case-specific checklists and provide constructive feedback in a sensitive, objective manner.

The EPT is responsible for simulating each case scenario with its specific problem, history, and exam findings. During practical sessions, the participants will work with the EPTs on specific cases that are designed to help participants recognize problems and practice appropriate management. The facilitator will moderate the cases. After each case is completed, the EPT or facilitator provides positive feedback to the participant and steps for improvement.

How to incorporate the EPT cases into the skill stations

The EPT cases can be used to demonstrate and practice using equipment and practical skills, in a simulated case based environment. With each skill station, the accompanying EPT cases are listed.

- First, introduce the skill station and explain what skills will be practiced.
- Next, demonstrate the equipment or skill, and in applicable give the participants and opportunity to practice.
- Finally, use the EPT cases to reinforce and practice the skills that have been learned.

You may not have time for all of the EPT cases listed. Extra cases are provided if the facilitator identifies certain areas that require additional practice. These additional cases can be practiced during breaks, and between sessions. As a facilitator, you should be familiar with the cases prior to the start of the course, so that you can be flexible and use the cases that will provide the greatest benefit for your students.

A practical session facilitator should:

- prior to the case scenario portion of the practical sessions, give participants instructions on how to practice their skills in these cases.
- Keep cases quick, no more than 5 minutes per case including feedback.
- Mark off on the critical action list when the participant completes a critical action.
- Help guide the participant with questions if they are having difficulty completing a task.

Ask other people in the group to help with suggestions. For example, you may say, “What are you looking for when you look at the patient?” or “What first-line emergency treatments would you give to the patient?”

- Explain to participants that they should use the skill stations as an opportunity to practice what they have learned. Remind them that this is not a test but an exercise and opportunity to improve their skills. The feedback given by the facilitators is meant to be non-judgemental and should be taken in a positive manner. The skill stations should be used to improve learning. If a participant is unable to successfully perform a skill, the facilitator should provide further guidance on how to improve and then have the participant try again. The participant should repeat the skill as often as needed until the skill can be performed competently. The facilitator can also have the participant observe another participant performing the skill, and then have the participant reattempt the skill.

Explaining EPT case scenarios to the participants

Explain that participants will work with expert patient-trainers (EPTs), people who have been trained to role-play clinical cases with them. If EPTs are not available, facilitators will play this role. At the end of the role-play participants will be given feedback. Inform the participants that feedback facilitates learning; they should not be concerned if they do not know the correct answers right away. Tell them that you know they have clinical experience and they should rely on that experience in addition to what they have learned in class. By the second day they will have a better idea of how the practical sessions work.

Emergency cases can be stressful for the health worker because they need to identify the problem and act quickly. Practicing these scenarios in a simulated encounter reduces the element of stress and allows the health worker to focus on providing the appropriate response. **Please remind participants EPTs are actors, and to respect them in their examination, and only simulate abdominal thrusts etc!**

Demonstrate one of the cases yourself so that participants understand what is expected. Give the participant a card with the case scenario. The EPT will act out the case scenario. Case scenarios should follow material learned in the classroom. For example, the first day case scenarios will focus on triage, airway and breathing. The scenarios should be repeated until the material is mastered. Given time limitations, each participant will not be able to practice every case. However, they should be able to observe the other participants during their cases. You assign participants to groups of 2 so there is a primary participant and an assistant. Each day, aims to reinforce the skills learnt earlier on the course.

How to do the EPT cases

- Evaluate the patient for Quick Check emergency signs of airway and breathing as though you are seeing the patient for the first time. Give first-line emergency treatments for airway and breathing.
- Say aloud everything you are thinking and doing. For example say, “I am now assessing the airway and breathing. I am looking for obstruction, cyanosis, and severe respiratory distress.” Or, “The patient is in severe respiratory distress. I am going to place the patient on oxygen.” Your facilitator will not know if you have done something if you do not say it aloud.
- Ask for any information that you want including vital signs. Information will not be given unless you ask for it.
- You will be expected to assess and recognize any Quick Check emergency signs. You will then be expected to manage these emergency signs with first-line emergency

treatments. Your facilitator will tell you when the exercise is complete. When the exercise is complete you will review the exercise.

○

Instructions for EPTs

- Explain to the EPTs the importance of the Quick Check and this IMAI course.
- Explain their role in simulating case scenarios for the training of health workers, give them the setting, the background to the scenario.

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Give the following instructions to the EPTs:

- In these exercises, the course participants will practice what they have learned in the Quick Check. The Quick Check is a tool that will help participants identify emergency problems and manage them.
- Each set of cases will focus on one part of the Quick Check (problems with airway such as choking and breathing problems, circulation problems, or problems with consciousness or seizures). The case will end after the emergency treatments for that specific section have been completed.
- As the Expert Patient-Trainer, your job is to help teach the participants these skills. At the start of the role-play, give the participants a card with a case scenario. Each participant will be asked to figure out the problem that you are role-playing and use the Quick Check to determine if it is an emergency. The participant must then offer you the appropriate emergency treatment.
- As each participant goes through the exercise, either you or the facilitator will check off the critical tasks which the participant has completed. The critical tasks are the management actions required for first-line emergency treatments. If the participant does not complete a critical task, your role-play condition should worsen.
- Some participants may offer additional correct treatments. These are listed in the table as “urgent management” actions and are marked with an asterisk (*).
- After the exercise, the facilitator will review the critical task list with the participant and discuss what could be done differently.

- Practice the cases with the EPTs prior to the session. They should understand how the role-play will occur and how to provide feedback in a non-judgemental manner.
- Provide a demonstration of a case scenario in front of the group with another facilitator.

STEP BY STEP GUIDE TO THE CLASSROOM PRACTICAL SESSIONS

SESSION 1: INFECTION CONTROL

CONTENT:

- hand washing,
- Standard precautions and preventing needlestick injuries

EPT CASES: There are no specific EPT cases assigned this session, however these skills will be reinforced during all of the EPT cases.

PROCEDURE:

- As a group go through the discussion points and demonstrate the hand washing.
- Give each participant an opportunity

A. Hand washing (5 minutes) –

The importance of hand hygiene for infection control will be discussed and participants will practice hand washing.

Materials needed

- Alcohol-based hand rub

Set up

- Place enough hand rub for group on table.

Procedure

- **Ask:** When is hand washing needed?
 - **ANSWER: All patient care.**
- **Ask:** List some indications for hand washing.
 - **ANSWER: Before/after direct patient contact and between patients (even if gloves are worn), after gloves are removed, after touching blood, body fluids, secretions, excretions, non-intact skin and contaminated items (even if gloves are worn).**
- Explain that hand washing with soap and water should take 40-60 seconds. For the hand rubbing with alcohol-based solution, washing should take 20-30 seconds.
- Demonstrate the proper hand washing technique (see IC Section 6-4 in DCM) and have participants practice.

B. Prevent needle stick injuries (5 minutes)

In this exercise, participants go through the what are universal precautions and how to prevent needlestick injuries in order to protect themselves and others from infection transmission.

Materials needed

- Gloves
- Gowns
- Surgical masks and N95 masks

- Eye goggles
- Sharps containers
- Needles
- IV angiocatheters
- Syringes

Set up

- Place items on table

Procedure

- **Ask:** What does the term “universal precautions” mean?
 - **ANSWER: A set of infection control practices used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes.**
- **Ask:** When should gloves be worn?
 - **ANSWER: When touching blood, body fluids, secretions, excretions, mucous membranes, non-intact skin; change between tasks and procedures on the same patient after contact with potentially infectious material.**
- **Ask:** Should gloves worn for one patient be removed before seeing the next patient?
 - **ANSWER: Yes, also hand washing should be performed.**
- Explain that a surgical/medical mask and eye protection (or face shield) and gown should be worn during activities that may generate splashes or sprays of blood, body fluids secretions and excretions.
- Explain the importance of using sharps containers. Tell participants that this should also be part of the emergency trolley.

SESSION 2: QUICK CHECK TRIAGE

CONTENT:

- Practice using quick check triage system

EPT CASES: 1-4

PROCEDURE:

- Assemble a small groups of 2-3
- The groups will take turns practicing the EPT cases
- The groups waiting for the EPT cases will practice using the Quick Check card sort

Triage card sort (10 minutes)-if extra time

In this exercise, participants will practice triaging patients based on their clinical signs.

Materials

Cards are available in the **Training Support Set**. Make sure to print and laminate cards prior to the start of the course.

- Emergency card (pink)
- Priority card (yellow)
- Non-urgent card (green)
- Case scenario cards (white)

Set up

- Mix up and place cards on table.
- Place directions on table.

Direction

- Explain to participants that they will need to sort the cards with the case histories into pink-yellow-green (emergency, priority, non-urgent(no emergency/priority))

CASES**ANSWERS**

CASES	ANSWERS
1. 33 year-old male with known HIV, now with chronic diarrhoea and fast and weak pulse and BP 70/20.	Emergency
2. 45 year-old man with noisy breathing and choking.	Emergency
3. 25 year-old female with vaginal bleeding after delivery with weak pulse and un-recordable BP.	Emergency
4. 25 year-old male with active bleeding from an abdominal laceration due to stab injury.	Emergency
5. 25 year-old male with swollen and deformed right thigh with pulse rate 130/min and BP 80/30.	Emergency
6. 34 year-old postpartum woman with convulsions.	Emergency
7. 55 year-old male smoker with sudden severe squeezing chest pain.	Emergency
8. 34 year-old female who is HIV positive and now with severe headache and stiff neck.	Emergency
9. 28 year-old female in severe pain with lower abdominal tenderness and hard abdomen on palpation.	Emergency
10. 57 year-old male patient with moderate shoulder pain and dislocation.	Priority
11. 18 year-old male with cough, sneezing, rhinorrhoea and sore throat for 5 days.	Non-urgent
12. 38 year-old female with pale palms and conjunctiva.	Priority
13. 35 year-old female with vomiting of fresh blood.	Priority
14. 22 year-old male with diarrhoea 5X per day for the past 2 days.	Priority
15. 66 year-old known hypertensive with sudden onset of inability to use the left leg and arm.	Priority
16. 24 year-old male with toothache and swelling.	Non-urgent
17. 25 year-old male with cough producing sputum, with fever, weight loss and poor appetite for the last 3 weeks.	Non-urgent
18. 35 year-old male with swelling of the right knee.	Non-urgent
19. 25 year-old female with spotting after starting on injectable contraceptives two months previously.	Non-urgent
20. 18 year-old male complaining of pain while swallowing and low grade fever.	Non-urgent
21. 56 year-old male with low back pain but no difficulty walking.	Non-urgent
22. 15 year-old female with painful menstrual cramps.	Non-urgent
23. 15 year-old diabetic with fever, increased thirst, polyuria, weak pulse and BP 60/20.	Emergency
24. 35 year-old male with sudden onset of shortness of breath, bluish lips, and chest pain after a penetrating chest wound.	Emergency
25. 45 year-old female, known asthmatic with bluish lips, shortness of breath and wheezing.	Emergency
26. 10 year-old female gasping for air, bluish discoloration of lips and decreased breath sounds on both lung fields.	Emergency
27. 23 year-old male with heart burn and occasional vomiting.	Non-urgent
28. 23 year-old male with snake bite to left leg with mild bleeding.	Emergency
29. 18 year-old female who was sexually assaulted 1 hour ago.	Priority
30. 14 year-old male with a burn on right hand from touching a	Priority

hot iron.	
31. 28 year-old pregnant female with complaining of flu like symptoms, fever, cough and difficulty breathing for the past 3 days - SpO ₂ of 86%.	Emergency
32. 23 year-old male, known diabetic brought in unconscious.	Emergency
33. 21 year-old female brought in with shortness of breath following argument with boyfriend.	Priority
34. 16 year-old male with diarrhoea 5X day for 3 days with BP 80/35.	Emergency
35. 35 year-old female with HIV who started a new ART regimen, presenting with severe rash and peeling skin.	Priority
36. 20 year-old male who keeps hitting himself with his hands and seems severely agitated.	Priority

SESSION 3: AIRWAY AND BREATHING 1

CONTENT:

- Open airway
- Insert airway device to keep airway open
- Bag valve mask ventilation

EPT CASES: 5,6,7

PROCEDURE:

- As a small group go through the procedure for opening an airway, inserting an airway device to keep the airway open, and bag valve mask ventilation.
- Divide the group into smaller groups, where one group will practice using the equipment and the other group will practice using the EPT cases.
- After everyone has had a turn switch.
- The equipment for this skill station should be kept available during the course so that the participants can have a chance for additional practice.

Manage airway: open airway (15 minutes)

In this exercise, the participants will learn the two techniques for opening the airway (head tilt, chin lift) for trauma and non-trauma patients. Participants will learn the correct technique to clear visible obstruction. Participants will learn the correct technique to help choking patients.

Materials needed

- Adult mannequin (optional) *or* EPT
- Table *or* blanket to place on floor that mannequin can lie on.
- Suction apparatus with foot pump (if available, otherwise see at hospital visit)

Set up

- Place mannequin on table at waist height or on a blanket on the floor.
- Arrange oral and nasal airways next to mannequin.

Procedure

- **Ask:** What are signs of airway obstruction?
 - **ANSWER: Visible airway obstruction, stridor, patient is somnolent and not swallowing secretions.**
- **Ask:** What are some clinical situations when the airway can become obstructed?
 - **ANSWER: Patient is unconscious, overdose, seizure, trauma.**

- Explain to participants that positioning of the patient's head is an effective way to quickly relieve obstruction of the patient's tongue has fallen backwards and is obstructing the airway.
- **Ask:** Why do you need to be careful when moving a trauma patients head?
 - **ANSWER: Moving the head can result in movement of the spine. In a patient with a spinal injury this could lead to paralysis.**
- Demonstrate technique to open airway.
 - No trauma: head tilt/chin lift
 - Trauma: jaw thrust
- Explain how to look for a foreign body and safely clear secretions from the throat using suction apparatus.
- Ask participants how they should approach patients with suspected foreign body obstruction; explain differences if conscious or not, speaking/coughing or not.
- Demonstrate abdominal thrusts, back blows. If possible, use a mannequin. If a mannequin is not available, demonstrate with another facilitator. Be gentle while demonstrating, and aware of social/cultural differences regarding contact between two people, especially two people of opposite gender.
- Give each participant one of the following vignettes and ask them to demonstrate how they would open the airway or manage foreign body obstruction using the mannequin.

1. 32 year old man, unconscious, shallow respirations from suspected overdose.	Head tilt/chin lift
2. 32 year old male who began coughing uncontrollably during dinner, became unconscious while coming to the hospital.	Head tilt/chin lift, apply bag valve mask and give 2 breaths. remove foreign body if visible, if not, try abdominal thrusts
3. 46 year old female unconscious after a fall.	Jaw thrust
4. 22 year old male with a gunshot wound to the neck	Jaw thrust
5. 45 year old female with difficulty breathing, holding her throat with both hands. She is coughing.	Encourage coughing, and observe carefully
6. Same patient now stops coughing and appears to be worsening.	Tell the patient you will help, and give 5 abdominal thrusts
7. 18 year old male unconscious with facial swelling from suspected anaphylaxis.	Head tilt/chin lift
8. 26 year old female in a postictal state following a seizure.	Head tilt/chin lift

Manage airway: Placing airway device (15 minutes)

In this exercise, participants will learn indications and proper technique for placement of nasopharyngeal and oral airway devices.

Materials needed

- Oral and nasal airway devices in at least 2 different sizes
- Lubricant
- Mannequin (optional)

Set up

- Arrange airway devices on table

Procedure

- Explain to participants that the purpose of an oral/nasal airway device is to prevent the tongue from falling back in the throat and obstructing the airway.

- Show participants various airway devices and make sure they understand the difference between the types. If patient is completely unconscious, use an oral airway. If patient is semi-unconscious, use a nasal airway. A nasal airway is better tolerated if the patient has an intact gag reflex.
- Explain procedure for placement of airway device. Show how to choose the correct size and the diagram of placement of oral and nasal airway devices. Demonstrate placement on the mannequin if available.
- **Ask:** Does an oral/nasal airway device protect an unconscious patient from aspiration of secretions and gastric contents?
 - **ANSWER: No**
- **Ask:** Should an oral/nasal airway be placed if you suspect foreign body obstruction?
 - **ANSWER: No**
-

Bag valve mask ventilation (BVM)* (20 minutes)

*This exercise is optional if a suitable mannequin is not available. Without a mannequin, you can show participants a bag valve mask and the ventilation procedure.

In this exercise, participants will learn indications and proper technique for bag valve mask ventilation.

Materials needed

- Table or blanket to place on floor that mannequin can lie on
- Adult mannequin (optional)
- Bag valve mask (adult and child)
- Nasal and oral airway devices in variety of sizes

Set up

- Arrange mannequin on table or on blanket on the floor
- Place bag valve mask and oral and nasal airways next to the mannequin

Procedure

- **Ask** participants to explain how they assess for adequate ventilation.
- **Ask:** Describe some clinical situations when ventilation would need to be assisted with a bag valve mask.
 - **ANSWER: Patient is not breathing, unconscious with shallow respirations, severe head injury, overdose, or poisoning.**
- Explain to participants that bag valve mask ventilation is effective only if the airway is open and if available you should place an oral or nasal airway device to facilitate effective bagging.
- Describe and demonstrate one-person and two-person techniques for bag valve mask ventilation.
 - Choose the appropriate size mask
 - Connect the bag to high flow oxygen
 - Create a good seal between mask and mouth
 - Deliver breaths
- Have each participant practice one and two person techniques.
 - Ask participants to describe how they would place an oral or nasal airway to effectively bag the patient.
- **Ask:** What do you look for to be sure that you are effectively ventilating the patient?
 - **ANSWER: Air is not escaping from sides of mask, there is equal chest rise, patient becomes less cyanotic, and SpO₂ improves.**

SESSION 4: AIRWAY AND BREATHING 2 CONTENT:

- How to use a pulse oximeter
- How to give oxygen and titrate
- How to give salbutamol

EPT CASES: 8, 9, 10

PROCEDURE:

- As a small group go through the procedure for how to use a pulse oximeter, give oxygen, and titrate oxygen.
- Divide the group into smaller groups, where one group will practice using the equipment and the other group will practice using the EPT cases.
- After everyone has had a turn switch.
- The equipment for this skill station should be kept available during the course so that the participants can have a chance for additional practice.
- NOTE: depending on the number of facilitators and EPT's available, you may chose to divide this skill station into 2 separate stations.

How to use a pulse oximeter (10 minutes)

In this exercise, participants will learn how to place a pulse oximeter on patients and check the SpO₂.

Materials

- Pulse oximeter with probe

Set up

- Arrange equipment on table.

Procedures

- Demonstrate how to use the pulse oximeter,
- Allow participants to practice using the pulse oximeter on themselves and each other.

G. Give oxygen and titrate (20 minutes)

In this exercise, participants will learn how to start the patient on oxygen, become familiar with the oxygen equipment, and manage patients on oxygen.

Materials

- Oxygen poster
- Oxygen concentrator (if at hospital)
- Oxygen cylinder (if at hospital)
- Non-crush oxygen tubing
- Nasal cannula
- Face mask
- Face mask with reservoir
- Mannequin or EPT (if available)

Set up

- Arrange the materials on the table.

Procedures

- Go through indications for providing oxygen.
- Show the participants each item and explain its use. Pass the equipment around the group to allow them to become familiar.
- Explain sources of oxygen: concentrator and cylinders.
- Demonstrate how to open the cylinder and adjust oxygen flow (IF NOT AT HOSPITAL

WITH CYLINDER OR CONCENTRATOR THEN SKIP THIS SECTION. CONDUCT DEMONSTRATION AT HOSPITAL).

- Explain the different oxygen delivery devices (prongs, face mask, face mask with reservoir).
- Demonstrate how to set up the oxygen equipment. Connect the oxygen tubing to the oxygen cylinder or concentrator and then to the oxygen delivery device (prongs, mask).
- **Ask:** How can you determine if oxygen is flowing?
 - **ANSWER: Put tubing or prongs underwater and check to see if there are air bubbles.**
- Use the oxygen poster to explain the increasing oxygen concentration delivered by the nasal prongs, face mask, and face mask with reservoir. Explain why no more than 5 L/min should be delivered with the nasal prongs (uncomfortable/ineffective). Mention improved patient comfort when using humidifier.
- Demonstrate proper placement of the prongs and masks.
 - Demonstrate using an EPT (if available), or use an appropriate mannequin. Clean equipment after use.
 - If EPT or mannequin is not available, discuss proper use of the equipment. Demonstrate during hospital visit.
- Give oxygen and titrate: Explain that all patients with emergency signs should quickly be started on oxygen at 5 L/min by nasal prongs, and then titrated depending on SpO₂ and respiratory rate.
- Explain how to count respirations. Count the breaths for 15 seconds and multiply by four. Ask participants to count each other's respiratory rate.
- Give each participant one of the following cases and ask them how they would approach the patient using the mannequin.

Case Question	Answer
1. A 44 year old female with HIV/AIDS presents with severe respiratory distress, how would you begin oxygen?	Start at 5 L/min by nasal prongs and titrate.
2. The same patient now has an oxygen saturation of 85%, what next?	Increase to 6 L/min by face mask and increase until pulse oximetry >90%. If she fails to improve, or worsens, consider giving antibiotics, and consider PCP and treat with co-trimoxazole and steroids.
3. A 30 year old male was admitted yesterday with pneumonia. You find him to be breathing normally with normal oxygen saturation. He is receiving oxygen with a face mask. What should you do?	Decrease oxygen to 5 L/min by nasal prongs, observe for 2-3 minutes, and decrease again in 15 minutes as tolerated.
4. A 62 year old male with history of TB and smoking now presents with wheezing.	Begin oxygen at 5 L/min by nasal prongs; give salbutamol as per wheezing classification.
5. The same patient has worsened despite treatment, and now has an oxygen saturation of 85%, which is dropping rapidly even with oxygen by face mask.	Switch to higher flow face mask with reservoir, and check to make sure oxygen supply and other equipment is working. Follow other steps in "respond to drop in oxygen saturation as per wall chart.

Give salbutamol via MDI with spacer or nebulizer (5 min)

In this exercise, participants will learn the indications for giving salbutamol, how to make a spacer and practice giving salbutamol.

Materials

- Salbutamol MDI (may use empty MDI)
- 2 half-litre plastic cola bottles (one that is not cut and one that is cut out to create the spacer)
- Oxygen mask with nebulizer attachment

Set up

- Arrange materials on table.

Procedures

- Explain when to give salbutamol.
- S Demonstrate how to make a spacer using a cola bottle.
 - Carefully demonstrate the proper technique with and without the spacer.
- **Ask:** Why it is advantageous to use a spacer instead of the inhaler alone?
 - **ANSWER: More medicine is delivered to the lungs, less to the back of the mouth.**
- Explain how to give salbutamol MDI with spacer for a patient with mild, moderate or severe wheezing and show patients the MDI.

For mild wheezing

By metered dose inhaler: 100 mcg/puff; 200 puffs/inhaler

- Use spacer with inhaler if patient is able to coordinate breathing, if not use the mask.
- 2 puffs every 20 minutes x 3 times then 2 puffs every 3 to 6 hours.

For moderate-severe wheezing

- Prime spacer with 5 puffs, and then give 2 puffs via spacer every 2 minutes.

- Explain how to give salbutamol via nebulizer for a patient with moderate or severe wheezing.

Give salbutamol for moderate–severe wheezing

By nebulizer: for patient more than 20 kg:

- Place 5 mg salbutamol in 5 ml sterile saline in nebulizer driven by oxygen.
- Treat until the liquid is almost used up.
- **Assess response**

If incomplete or poor response:

- Give **salbutamol by nebulizer, every 10–20 minutes, or if poor response, continuously.**
- Give **ipratropium** by metered dose inhaler via spacer or nebulizer. Then resume salbutamol.
- **Assess response**

If incomplete or poor response:

- Give salbutamol continuously by nebulizer.
- For **life-threatening** wheezing give **2 g of magnesium sulphate IV** over 20 minutes or IM.

SESSION 5: CIRCULATION

CONTENT:

- Manage haemorrhage
- Give IV fluids for resuscitation

EPT CASES: 11-15

PROCEDURE:

- As a small group go through the procedure for how to assess and manage circulation.
- Divide the group into smaller groups, where one group will practice using the equipment and the other group will practice using the EPT cases.
- After everyone has had a turn switch.
- NOTE: if trauma included, include stabilizing haemorrhage in a trauma patient

Assess/manage circulation (20 minutes)

This exercise will take place in 2 parts. Participants will first practice the Quick Check emergency assessment of circulation. They will then practice some important aspects of managing circulation including placing an IV, giving IVF, and controlling haemorrhage. It is assumed that the participants are familiar with how to place an IV.

Materials needed

- Gauze
- Tape or ribbon
- Sheets (3) (to wrap pelvis/femur)
- Boards for splinting extremities
- 2-3 IV angiocatheters (at least 16-18 gauge)
- Intravenous fluids with tubing (at least 3 L)
- Watch with second hand (to count pulse)
- BP cuff with manometer and stethoscope (if available)

Set up

- Set up materials on a table.

Procedure

Part A: Assess circulation. During this part of the skill station, the participants will become familiar with Quick Check for emergency signs of circulation.

- First have participants practice checking for a radial pulse and checking capillary refill.
- Then have the participants practice the Quick Check assessment for emergency signs of circulation. They should say aloud what they are looking for:
 - Weak or fast pulse
 - Capillary refill
 - Heavy bleeding
 - Severe trauma

If a Quick Check emergency sign of circulation is detected, they should know to ask for the patient's pulse and blood pressure.

Part B: Manage circulation. During this part of the skill station the participants will become familiar with some important aspects of controlling circulation.

- Place IV and run rapid IVF
 - The participants should be familiar with how to place an IV and giving IVF. Discuss the different sizes of IV angiocatheters. Show what a large angiocatheter (16 or 18g) looks like and discuss sites for placement when needed to give rapid IVF.
 - Discuss different types of IVF. Discuss that only crystalloid should be used for resuscitation. Show how to run fluids rapidly. Attach the IV tubing to the IV bag. Open the fluids wide and run into a bucket. Only run fluids for a few seconds so as not to waste too much fluid. Have the participants note how quickly the fluid drips. Slow down the rate and demonstrate running fluids slowly.
- Apply pressure to control haemorrhage
 - Show correct technique to apply manual pressure.
 - Discuss universal precautions when applying pressure.
- Splint femur (may chose to skip if not reviewing trauma)
 - Using splint board and demonstrate how to splint the femur. Show how to secure one leg to the other if a board is not available.
- Splint pelvis (may chose to skip if not reviewing trauma)
 - Use sheet to wrap the pelvis.

SESSION 6: CONSCIOUSNESS/CONVULSIONS

CONTENT:

- Assess and manage patients with altered consciousness
- Give diazepam to control convulsions.

EPT CASES: 16-19

PROCEDURE:

- As a small group go through the procedure for how to assess and manage patients with altered consciousness and give diazepam for convulsions.
- Divide the group into smaller groups, where one group will practice using the equipment and the other group will practice using the EPT cases.
- After everyone has had a turn switch.
- NOTE: if trauma included, include spinal immobilization in a trauma patient

Manage spinal injury/recovery position (15 minutes)

In this exercise, participants will learn who needs immobilization for a possible cervical spine injury, how to immobilize the cervical spine, and how to correctly move a patient with a possible spinal injury.

Materials needed

- Cervical collar or local materials (newspaper, towels, tape) to immobilize spine
- Spinal board

Set up

- Arrange materials on the floor.

Procedure

- Discuss who needs spinal immobilization and why the spine needs immobilization. Patients need to be immobilized until the spine can be cleared clinically or radiographically.
 - Immobilize every unconscious trauma patient.
 - Immobilize every conscious trauma patient with head, face, neck injury.
 - Immobilize trauma patient with posterior neck pain/cervical spine tenderness, or neurological signs.
- Practice correct technique to immobilize cervical spine.
- Practice log roll technique.

Need 3-4 people

Objective: Move head and body as one unit to keep the spine in line.

1. First person kneels at the patient's head facing the patient and places his/her hands on each side of the patient's head and jaw.
2. Two to three more people should kneel at the patient's side at the level of the shoulder, hip, and knee.
3. These three people reach across the patient and grasp the patient's shoulder and waist(one person), hip and thigh (one person), and knee and ankle (one person).

- Practice placing patient in recovery position. Discuss differences between patients with trauma versus no trauma.

Give diazepam (10 minutes)

Participants learn indications for diazepam and how to give diazepam.

Materials

- IV mock diazepam
- Syringe
- Needle

Set up

- Arrange materials on table.

Procedures

- Point out the QC charts in DCM (p 2-19).
- Explain how to give diazepam rectally.
 - Base dose on weight of the patient.
 - Draw up the dose from an ampoule of diazepam into a syringe.
 - Remove the needle.
 - Insert the syringe 4 to 5 cm (about the length of your little finger) into the rectum and inject the diazepam solution.
 - Hold the buttocks together for a few minutes.
- Participants practice quickly drawing up amount for 50 kg adult.
- **Ask:** What is the maximum amount of diazepam which can be given by IV?
 - **ANSWER: 30 mg**
- **Ask:** When should the second dose be given if the patient is still convulsing?
 - **ANSWER: 10 min**
- **Ask:** What is the typical maintenance dose for an adult patient who is 50 kg if diazepam is given by IV? If diazepam is given rectally?
 - **ANSWER: 10 mg in 150 ml over 6 hrs. 2 ml every hour.**
- **Ask:** What to do if RR drops to 14?
 - **ANSWER: Respiratory depression is a possible effect of diazepam and maintenance dose should be stopped if breathing is less than 16 breaths/ minute.**

SESSION 7: SHOCK

CONTENT:

- Resuscitation of patient in shock
- Administering vasopressors

EPT CASES: 20-22

PROCEDURE:

- As a small group go through the procedure for how to administer vasopressors.
- Divide the group into smaller groups, where one group will practice administering vasopressors and the other group will practice using the EPT cases.
- After everyone has had a turn switch.

Give vasopressors (30 minutes)

In this exercise, participants will learn the indication for vasopressors and how to make and start the infusion.

Materials

- 2 mock epinephrine 1 ampoule (1:1000 or 1mg/ ml) vials
- 1 mock dopamine ampoule
- Alcohol pads
- Syringe (1 ml)/ needle
- 200 ml normal saline bag
- IV tubing
- IV pole if available
- Peripheral IV catheter or central venous catheter if available (to see how to hook it up)
- Flip chart/ markers

Set up

- Arrange materials on table

Procedures

- Refer to appropriate vasopressor chart in DCM (Section 3.1-13).
- **Ask:** What are the indications for vasopressors?
 - **ANSWER: If the SBP still remains less than 90 and signs of poor perfusion (low urine output, mental status) AFTER adequate fluid resuscitation (e.g. estimate 60 ml/kg).**

HOW TO PREPARE EPINEPHRINE INFUSION

- **Ask:** What is the target infusion concentration for epinephrine?
 - **ANSWER: 10 micrograms per ml**
- **Show** how to prepare the target infusion concentration using the mock Epinephrine ampoules and 200 ml normal saline bag.
 - Gather supplies.
 - Wash hands with antibacterial soap.
 - Check the medication vials for correct drug, accurate dosage, and expiration date.
 - Read ampoule label 2 more times (Remember to read ampoule label 3 times to confirm concentration before mixing).
 - Check IV bag for leaks, defects, particles or precipitates. If problem, use a fresh bag.
 - Look at the IV tubing and make sure the clamp is closed so no liquid will flow through tubing.
 - Rub the IV medication port with alcohol pad.
 - Draw up entire contents of 1 amp (1 mg/ml) of epinephrine and add to 200ml bag of normal saline using syringe/needle.
 - Draw up 2nd amp (1 mg/ml) of epinephrine into the same bag of normal saline bag using a syringe/needle.
 - Place the IV bag with the medication on the IV pole. The IV bag should be higher than the patient's head.
- **Ask:** How many micrograms of epinephrine are added to the 200 ml bag of normal saline?
 - **ANSWER: 2,000 mcg (since each amp is 1 mg/ ml and you added 2 ml medication to the bag)**

- **Explain** that once this 2000 mcg is mixed with the 200 ml bag, the target infusion concentration of 10 microgram/ml has been made. Use the flip chart to show calculation.
- **Ask:** How many micrograms should be added to a 1000 ml normal saline bag to make this same target concentration?
 - **ANSWER: 10,000 mcg (which would be equivalent to 10 ampoules being added to the 1 L bag)**
- **Show** how to attach solution to tubing and catheter (if using peripheral venous catheter, you need to use a metal clamp).
- **Remind** participants if giving the epinephrine infusion peripherally, they should use the largest vein possible.

HOW TO DETERMINE INFUSION RATE

- Now, **show** how to calculate the dose and infusion rate on the vasopressor chart.
- **Explain** that if patient has hypotension (SBP<90 and clinical signs) after adequate fluid resuscitation, the epinephrine dose rate should be 0.05 mcg/kg/min.
- **Remind** participants that the dose rate is weight based. Participants should try to use the actual weight if they have it measured. If not, they may estimate if the person is small (use 50 kg), average (use 60 kg) or large (use 70 kg).
- **Explain** that the dose rate indicates how much of the concentration of epinephrine to give the patient per minute.
- **Explain** that if the patient is very hypotensive, start at the higher dose rate given in the chart of 0.2 micrograms/kg/min.
- **Show** participants how the infusion rate is calculated so they can calculate it in their own hospital setting.
- **Example:**
 0.5 mcg/kg/min for 60 kg man= 3 mcg/min
 infusion rate=desired dose rate/infusion concentration
 Epinephrine infusion rate for 60 kg man= 3 mcg per min/10 mcg per ml= 0.3 ml/minute X
 60 min in 1 hr= 18 ml/hour

HOW TO PREPARE DOPAMINE INFUSION

- **Ask:** When is dopamine infusion preferred?
 - **ANSWER: shock in severe malaria**
- **Ask:** What is the target infusion concentration for dopamine?
 - **ANSWER: 1000 micrograms per ml**
- **Ask** a participant to volunteer to **show** how to prepare the target infusion concentration using the mock dopamine ampoules and 200 ml normal saline bag.
 - Gather supplies.
 - Wash hands with antibacterial soap.
 - Check the medication vials for correct drug, accurate dosage, and expiration date.
 - Read ampoule label 2 more times (remember to read ampoule label 3 times to confirm concentration before mixing).
 - Check IV bag for leaks, defects, particles or precipitates. If there is a problem, use a fresh bag.
 - Look at the IV tubing and make sure the clamp is closed so no liquid will flow through tubing.
 - Rub the IV medication port with alcohol pad.
 - Draw up entire contents of 1 amp (200 mg in 5 ml) of dopamine and add to 200ml bag of normal saline using syringe/needle
 - Place the IV bag with the medication on the IV pole. The IV bag should be higher than the patient's head.
- **Ask:** How many micrograms of dopamine are added to the 200 ml bag of normal saline?
 - **ANSWER: 200,000 mcg (since it is 200 mg per 5 ml and you added the entire 5 ml ampoule to the bag)**
- **Explain** that once 200,000 mcg is mixed with the 200 ml bag, the target infusion

concentration of 1000 microgram/ml has been made. Use the flip chart to show calculation.

- **Ask:** How many micrograms should be added to a 1000 ml normal saline bag to make this same target concentration?
 - **ANSWER: 1,000,000 mcg (which would be equivalent to 5 ampoules being added to the 1 L bag)**
- **Have participants demonstrate** how to attach solution bag to tubing and catheter.

HOW TO DETERMINE INFUSION RATE

- Ask a participant to demonstrate calculation on flip chart to determine dopamine infusion rate for 70 kg woman for an initial dose rate of 10 mcg/kg/minute.
 - **Answer:** 10 mcg/kg/min for 70 kg woman = 700 mcg/min
Dopamine infusion rate for 70 kg woman = 700 mcg per min/1000 mcg per ml = 0.7 ml/minute X 60 min in 1 hr = **42 ml/hour**
- **Ask:** What would the infusion rate be if you need to increase to 15 mcg/kg/minute?
 - **ANSWER: 63 ml/hour**

SESSION 8: SEVERE RESPIRATORY DISTRESS

CONTENT:

- Resuscitation of patient in severe respiratory distress
- Review of giving oxygen and using pulse oximetry

EPT CASES: 23-24

PROCEDURE:

- As a small group review how to titrate oxygen and use pulse oximetry
- Divide the group into smaller groups to practice using the EPT cases.

SESSION 9: Disease surveillance and Case reporting

CONTENT:

- Practice putting on and removing PPE
- Collection of a respiratory specimen

PROCEDURE:

- As a small group review how to put on and take off PPE.

In this exercise, participants will learn how to wear and remove PPE specific to VHF.

Materials

- VHF booklet
- PPE wall chart
- Gown (cloth or disposable)
- Plastic apron
- Gum boots
- Medical mask
- Face shield (or eye goggles if not available)
- Head cover

- Gloves

Set up

- Arrange materials on table

Procedures

- Have the group split up into pairs.
- Using wallchart, demonstrate by having one participant read the steps to put on PPE while a 2nd participant practices wearing PPE.
- Now follow the steps to remove PPE.
- Now have all participants have a chance to wear and remove PPE.

Demonstrate how to collect a respiratory specimen

Materials

- Surveillance manual-Appendix E
- Tongue depressor
- Sterile swabs
- Plastic vial

Set up

- Arrange materials on table

Procedures

- Demonstrate how to collect a respiratory specimen and remember to always follow standard precautions
- Swab should be held between the thumb and the first and second fingers with the shaft protruding beyond the web of the thumb (like a pencil). The main reason for this is that if the patient makes a movement in reaction to the swabbing, the swab will slide out of harms way.

Collection of posterior pharyngeal swabs (throat swabs) or nasal swab

- Hold the swab and with a sweeping motion, swab the posterior pharyngeal wall and tonsillar pillars
 - Have the subject say “aahh” to elevate the uvula.
 - Hold the tongue out of the way with a tongue depressor (N.B. This procedure can induce the gag reflex).
 - Avoid swabbing the soft palate and do not touch the tongue with the swab tip.
- If nasal collection, insert swab into nares and swab in a circular motion.
- Place the swab immediately into a sterile vial containing VTM.
- Break the applicator stick off near the tip to permit closure of the lid.
- Label the specimen container (the cap should not be marked as it may be switched during handling) with:

Hospital Visit

Hospital visit objectives

The clinical practice during the hospital visit is essential to the IMAI course. It allows the participants to work on clinical skills in a supervised setting.

General objectives

During the hospital visits participants will:

- Practice triaging patients based on the presence of emergency, priority or non-urgent signs.
- Provide emergency treatments and urgent management.
- Use clinical reasoning to determine a differential diagnosis.
- Learn how to care for severely ill patients, including patients in septic shock and severe respiratory distress.
- Learn how to monitor patients by recording information on the monitoring form and recognizing problems or changes in clinical status.

The main goal of the hospital sessions is for participants to master clinical skills. Facilitators should provide as much guidance as possible to make sure that participants are comfortable with these skills and can perform them with confidence.

Facilitator for the hospital visits

The hospital visit facilitator role is essential to liaise with the hospital, and ensure there are appropriate patients identified for each session. During the hospital visits, other facilitators will be required to help lead the small groups. The exact size of groups will be dependant on the individual course being run. There may be several groups at the same time in different areas of the hospital (OPD/emergency ward, inpatient wards, ICU) depending on the hospital set-up and where patients are seen.

Prior to the course, it may be beneficial during the facilitator training for the hospital visit facilitator to lead a session at the hospital for all the facilitators if they are unsure how the participant groups will work.

Tasks prior to the course (some of these tasks may be completed by the course director depending on the facilitators who are available):

1. Meet with the hospital director to obtain permission for conducting the hospital visit sessions during the course. Meet with directors of the emergency/OPD and inpatient wards. Explain how the hospital visit sessions will work. Describe what the facilitator and the participants will do. Ask for permission to conduct sessions in the wards/OPD.
 - In each ward, make sure your arrangements include the senior responsible nurse as well as the doctor in charge.
 - Ask the ward/OPD director for a clinical assistant. The clinical assistant is someone who works on the ward full time. Ask the director to assign the clinical assistant to arrive in time for the early morning preparations (usually 6:00 or 7:00 a.m. depending on the schedule). Ask for a translator to help interview patients in the early morning, as needed. You will have to provide a stipend for this individual.
2. Visit the OPD/wards. See how the ward is laid out and understand the schedule of admissions, meals, etc. Liaise with staff, to find the best time to bring course participants to see patients
3. Use this information to plan a tentative schedule for the clinical sessions:

- During facilitator training, if required (one group of up to 8 facilitator trainees for a 1–2 hour session each day)
 - During the course (1 to 4 groups of up to 6 participants each; 1–2 hour sessions for each group)
4. Meet with the course director to set the schedule for the sessions.
 5. Prepare an emergency trolley prior to the start of the course or make sure needed supplies are close at hand (**see DCM**).
 6. Obtain patient monitoring forms and clipboards.
 7. Find a place to hang the Quick Check chart.
 8. Brief any hospital personnel about the training.
 9. Supplement medical supplies if necessary. Ensure that treatment meets or exceeds minimal standards of care at the hospital.
 10. During the first few days of the facilitator training, select cases and conduct sessions with supervision and feedback from the course director or an experienced hospital visit facilitator. This allows you to obtain experience in this role and work out any problems before the course begins.

Tasks during the course:

1. Each morning, remind OPD / ward supervisors that groups of clinicians will be coming to evaluate and treat patients. Ensure that patient flow is not disrupted by participant visits. For the inpatient visits, select patients presenting that morning with signs of shock or severe respiratory distress. Ensure that patient consent has been obtained.
2. Prior to the session explain what will happen during the session and what participants are expected to do.
3. For the OPD triage practical session assign each participant to a patient. Make sure that you have obtained consent from the patient prior to participation. Observe participant assessment of the patient. If the patient has emergency signs coordinate with the treating hospital staff to guide participants to provide the necessary emergency treatments. Summarize the session. Offer praise for correctly provided treatments and offer suggestions for improvement.
4. Record the cases seen by participants on their **Hospital Visit checklist** (available in **Training Support Set**)
 1. For OPD triage:
 - a. Review plan for triaging patients and providing emergency care as needed. Work with clinical staff to prepare
 - b. Ensure there is space where participants may take the patient to provide emergency treatments.
 - c. Remember that it is important not to disrupt the clinical care of patients.
 - d. Don't forget to obtain consent from patients prior to reviewing them.
 - e. Explain the objectives of the visit, and how it builds on the EPTs, and demonstrate on the first patient.
 2. For inpatient visits:
 - a. Early in the morning on the day of the practical session, examine patients in the inpatient ward for severely ill patients (acute or intensive care unit). Identify patients with signs appropriate for the clinical session. This must be done on the morning of the visit as the clinical condition of hospitalized patients can change rapidly.
 - b. Patients with clear clinical signs should be used for demonstration. Obtain consent from patients or their caretakers.

- c. Select 3-6 cases with appropriate signs for participants to monitor, record, and respond to. Include patients with cases of septic shock and severe respiratory distress for the session.
- d. During the session, keep a list with brief notes on each case. Note the name, age, location in the ward (if necessary), pertinent history and positive signs. You can record this information as well as other pertinent labs/investigations on a patient monitoring form. This way you can ensure that you have collected the necessary information for the case summary at the end of each session. Keep in mind that clinical signs can change rapidly in very ill patients, so you may need to be flexible and ready to choose another patient.
- e. Ensure that there are enough patient monitoring forms for participants to keep notes on every patient they see that day (available in **Training Support Set**).
- f. Demonstrate any new clinical skill that participants may not have had a chance to practice. For example, if they were unable to learn about oxygen delivery systems during the skill station practice, this skill should be taught during the hospital visit
- g. During the session, allow participants to examine the patients and identify signs. You may guide participants during clinical practice but encourage them to determine the problem and make specific management recommendations for the patient.

General procedures for conducting the hospital visit

The hospital visit is a time for participants to see clinical medicine in practice and is limited to cases available that day. Hospital visits can be unpredictable – patients may not be available because they are sleeping, for example, and equipment may be in use and not available. Thus, participants may not always be able to practice what they have learned in the course. For this reason, the practical skill sessions are very important. Participants should have ample practice with the equipment during their skill sessions. In some cases however, reviewing materials in the hospital setting may be necessary. For example, reviewing the methods of oxygen delivery might be easier in the hospital where the oxygen canisters and concentrators are located.

Participant hospital visit checklist

Each participant is given a hospital visit checklist to keep and use throughout the training. Participants can monitor their clinical experience using this checklist.

When a participant masters a skill, the facilitator should initial the participant's practical skills checklist. After each clinical session, review each participant checklist. This helps the facilitator assess if a participant has missed a clinical sign or symptom, and ensures that each participant has seen the necessary cases. The checklist includes the following:

Emergency treatments:

- Open airway
- Place airway device
- Bag valve mask ventilation
- Give oxygen by nasal prongs
- Give oxygen by face mask

- Measure oxygen saturation using pulse oximetry
- Give salbutamol
- Control bleeding with direct pressure
- Give IV fluids rapidly for resuscitation
- Give glucose for altered consciousness
- Give diazepam for convulsions
- Immobilize spine

Cases:

Check off which cases were seen during the hospital visit. If seen, list the emergency or priority sign or symptom

Triage:

- Emergency sign airway and breathing _____
- Emergency sign circulation _____
- Emergency sign altered consciousness or convulsions _____
- Emergency sign life-threatening pain _____
- Priority sign _____

Severely Ill Patient

- Septic shock _____
- Shock from other cause _____
- Severe respiratory distress _____

Specific instructions for each day's hospital visit

Day by day summary of the hospital visit:

DAY 2:
Triage, Quick Check
 Location: Emergency ward registration area/OPD

DAY 3:
Continue urgent management and caring for the severely ill patient, clinical reasoning, septic shock and severe respiratory distress.
 Location: Inpatient wards/emergency ward/OPD

DAY 4:
Triage, QC, and Managing the severely ill patient
 Location: OPD/emergency ward/inpatient wards

Day 2: OPD/emergency ward

Triage and treatment

Modules 1-4: Quick Check, triage and emergency treatments

Learning Objectives	<ol style="list-style-type: none"> 1. Perform Quick Check to recognize patients with emergency signs 2. Triage patients according to emergency, priority and non-urgent signs 3. Provide first-line treatments to patients with emergency signs
Preparation	<ol style="list-style-type: none"> 1. Identify the ward clinician and nurse and obtain permission for visit. 2. Prepare equipment to check BP, temperature and SpO₂. Obtain an

	<p>emergency trolley if possible.</p> <p>3. Plan for steps to take if the patient demonstrates emergency signs (which ward clinician or nurse to contact and which room or area to take the patient where emergency treatment can be provided).</p>
Process	<ol style="list-style-type: none"> 1. Permission needs to be obtained from the hospital AND consent from the patients for their participation. 2. Explain visit objectives to participants. Explain that they will be triaging patients in conjunction with the hospital staff and also providing emergency treatment as needed. 3. As adult patients arrive in the OPD or emergency room, assign them sequentially to participants once consent is obtained. 4. Explain that the assigned participant should perform the Quick Check and triage the patient. They should speak out loud as they do the assessment. Other participants not assigned to a patient should observe the assessment. 5. If a patient demonstrates emergency signs, contact the ward clinician or nurse and bring patient to an area where emergency treatment can be provided. Make sure to have needed equipment available ahead of time. 6. Guide participants as needed and have group work together with hospital staff to provide appropriate care. 7. <i>Intervene if necessary and make sure emergency treatments are given immediately. The clinical practice must not interfere with patient care.</i> 8. Observe each participant working with the assigned patient. Make sure the participant is performing the clinical skills correctly. 9. Provide specific feedback and guidance as often as necessary. Remark on things that are done well and give additional guidance when improvement is needed.
At the end of the session	Summarize the session with participants, and encourage reflection.

DAY 3: Inpatient ward

Septic shock and severe respiratory distress

Module 12: Managing patients with septic shock

Learning Objectives	<ol style="list-style-type: none"> 1. To recognize and examine patients with septic shock. 2. To check vital signs (BP, HR, RR, AVPU), including SpO₂ and urine output. 3. To complete patient monitoring forms. 4. To review charts, check laboratory results, and ensure treatment is provided and benchmarks are met.
Preparation	<ol style="list-style-type: none"> 1. Identify ward clinician and nurse and obtain permission for visit. 2. Identify suitable patients who have septic shock as their diagnosis or as a possible diagnosis and obtain consent for visit. Prepare equipment to check BP, temperature, and SpO₂. 3. Prepare patient monitoring forms for each patient.
Process	<ol style="list-style-type: none"> 1. Divide participants into groups of 4–5 participants, and assign one facilitator for each group. 2. Visit the patient on the ward. 3. Introduce yourself and the participants to the patient, ask if the patient agrees to proceed with the examination. 4. Examine the patient. <ol style="list-style-type: none"> a. Check vital signs. Have each participant check one vital sign. b. Perform a targeted examination: the patient's general appearance (e.g. fatigued), pulse (e.g. weak, rapid), extremities (e.g. hot or cold), lungs, heart (e.g. JVP), and

	<p>examine infection site.</p> <p>c. Record findings on the patient monitoring form.</p> <p>5. If participants identify an emergency sign that needs emergency treatment, contact the ward nurse or clinician so that treatment is provided quickly.</p> <p>6. Thank the patient and leave the bedside.</p> <p>7. Look at patient chart and review documentation.</p> <p>a. Review laboratory results, diagnostic tests and medications.</p> <p>b. Record findings on patient monitoring form.</p> <p>8. Review benchmarks in the treatment of septic shock.</p> <p>a. Were benchmarks achieved for this patient?</p> <p>b. Determine the patient's time frame (time since admission) and what the current IV fluid therapy rate should be.</p> <p>c. Compare this to the patient's current treatment.</p> <p>9. If you find a treatment that should be considered after evaluation of the case, let the clinician caring for the patient know.</p> <p>10. Intervene and make sure emergency treatments are given immediately. The ward visit must not interfere with patient care.</p>
At the end of the session	Summarize the session with participants.

Module 13: Severe respiratory distress

Learning Objectives	<ol style="list-style-type: none"> To recognize and examine patients with severe respiratory distress. To check vital signs (BP, HR, RR, AVPU), including SpO₂ and urine output. To review real time oxygen delivery, tubing and the delivery system. To complete patient monitoring forms. To review charts, see laboratory results, treatments given and if benchmarks are met.
Preparation	<ol style="list-style-type: none"> Identify suitable patients and obtain consent for visit. Identify ward clinician and nurse and obtain permission obtained for visit. Prepare equipment to check BP, temperature and SpO₂. Prepare patient monitoring forms for each patient.
Process	<ol style="list-style-type: none"> Divide participants into groups of 4-5 participants, and assign one facilitator for each group. Visit the patient on the ward. Introduce yourself and the participants to the patient, ask patient if they agreed to proceed with the examination. Examine the patient. <ol style="list-style-type: none"> Check vital signs. Have each participant check one vital sign. Highlight fast RR and explain how to measure SpO₂. Perform a targeted examination: the patient's general appearance (e.g. signs of distress, accessory muscle use, retractions), lungs (e.g. highlight wheezes, crackles), extremities (e.g. oedema), and heart (e.g. JVP). Record findings on the patient monitoring form. If participants find an emergency sign that needs emergency treatment, contact the ward nurse or clinician so that treatment is

	<p>provided quickly.</p> <ol style="list-style-type: none"> 6. Review oxygen treatment: <ol style="list-style-type: none"> a. look at supply (concentrator or cylinder) and review how it works b. look at tubing connection and delivery device on patient (nasal cannula or mask, discuss why you choose one over the other) c. review how to titrate oxygen based on SpO₂. 7. Thank the patient and leave the bedside. 8. Look at patient's chart and review documentation. <ol style="list-style-type: none"> a. review laboratory results and medications given b. review chest radiograph c. record findings on patient monitoring form. 9. Review benchmarks for treatment of severe respiratory distress. <ol style="list-style-type: none"> a. Were benchmarks achieved for this patient? 10. If you find a treatment that should be considered after evaluation of the case, contact the ward clinician and advise them of the team's opinion.
At the end of the session	Summarize the session with participants. Encourage reflection on cases

PRACTICAL COMPETENCY EXAM

The practical competency exam combines material taught in the modules, skills learned at the skill stations, and clinical practice in the hospital setting. Depending on time, space, and availability the competency exam takes place either at the practical session area or the OPD/emergency ward. The competency exam should be used if this course is part of a certificate granting program. Otherwise, the cases can be used as additional practice if time permits or for review training during on-site clinical mentoring.

Preparation:

1. Have supplies used for practical sessions available in the room.
2. Divide room like this:
 - a. one table for airway/breathing
 - b. one table for circulation
 - c. one table for consciousness/ convulsion
 - d. one table with patient monitoring forms.
3. Split up participants into groups of 4 per table. One facilitator should be at each table.
4. Review case scenarios with individual participants. Each participant should get one scenario. Have participants talk about what steps they would take to help the patient and what treatments they would provide.
5. Every 5 minutes, have participants rotate to the next table Until they have completed the exercise.

Exam scenarios for airway and breathing	Steps needed
1. 38-year-old male with difficulty breathing. He is unable to speak in complete sentences and is wheezing.	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • Quick Check: identify emergency AB sign. • Call for help. • Give oxygen 5 L. • Give salbutamol for moderate to severe wheezing. • Have participant demonstrate how they would administer MDI (prime spacer with 5 puffs, and then give 2 puffs via spacer every 2 minutes) and nebulizer (place 5 mg in 5 ml sterile saline in neb driven by oxygen and treat until used up).

<p>2. 72-year-old female with severe respiratory distress, has difficulty talking due to laboured breathing.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: identify emergency AB sign. • Call for help. • Manage airway, no signs of obstruction; tell participant that patient is starting to look cyanotic. • Assist ventilation with bag valve mask. • Have participant show how would administer one-person BVM. Now ask another participant to help with two-person BVM. • Make sure participant takes step to attach BVM to high flow oxygen.
<p>3. 20-year-old male who is choking after eating. The man is holding his neck and coughing.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: identify emergency AB sign. • Encourage patient to cough and observe carefully. • Tell participant the patient is now not coughing or speaking. • Participant should tell patient that s/he is going to help him. • Have participant demonstrate how they would give 5 abdominal thrusts and 5 back blows. • Go to next participant, and tell him/her that the patient is now unconscious.
<p>4. 20-year-old male who was choking is now unconscious.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • Lay patient down on hard surface. • Give 2 breaths via BVM. • Try to manually remove foreign body if you can see it. • Deliver 5 abdominal thrusts.
<p>5. 32-year-old female was in a car crash and is unconscious. When you perform the QC, you hear gurgling.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: identify emergency AB sign. • Manage airway. • Participant should perform jaw thrust and clear secretions. • Place oropharyngeal airway. • Once airway placed, assist with ventilation.

Exam scenarios for circulation	Steps needed
<p>1. 50-year-old female was in a car crash and is bleeding extensively from several wounds.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: no sign of AB, identify emergency Circulation sign. • Participant should check SBP and pulse. • Tell participant that the BP is 70/40 and

	<p>pulse is 130</p> <ul style="list-style-type: none"> • Insert IV, give fluids (NS or LR) rapidly. • After 2 L if still in shock, transfuse. • Keep patient warm. • Send blood for type and crossmatch. • Apply pressure to stop bleeding. • Consider emergency surgical consultation.
<p>2. 82-year-old male with history of cough and fever now presents with breathing problems. You place him on 5L oxygen which helps his breathing but you determine that he also has a weak pulse.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: identify emergency Circulation sign. • Participant should check SBP and pulse. • Tell participant that the BP is 80/40 and pulse is 120. • Insert IV, give 1 L fluids (NS or LR) rapidly and reassess. • Keep patient warm. • Finish QC and check other vital signs. • Send emergency labs and blood culture if possible. • If patient has a fever, give antibiotics, antimalarials and glucose (if low or unknown).
<p>3. 19-year-old female with abdominal pain, delayed capillary refill and fast pulse.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: identify emergency Circulation sign. • Participant should check SBP and pulse. • Tell participant that the BP is 78/44 and pulse is 135. • Insert IV, give 1 L fluids (NS or LR) rapidly and reassess. • Keep patient warm. • If patient is visibly pregnant, have her lie on her left side.
<p>4. 15-year-old male with facial swelling, wheezing and fast pulse.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: identify emergency AB and Circulation sign. • Give 0.5 ml 1:1000 epinephrine IM for suspected anaphylaxis. • Participant should also check SBP and pulse. • Tell participant that the BP is 80/50 and pulse is 125. • Insert IV, give 1 L fluids (NS or LR) rapidly and reassess. • Keep patient warm.

Exam scenarios for consciousness/convulsion	Steps needed
<p>1. 30-year-old man is found unconscious.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: no ABC signs, identify altered level consciousness.

	<ul style="list-style-type: none"> • Manage airway and assist patient into a recovery position: no AB signs, patient seems drowsy/lethargic. • Give oxygen 5 litres. • Call for help • Check glucose-tell participant that it is 35 mg/dl on finger stick. • Give glucose. • Give IV glucose: D50 50 ml • Check level of consciousness on AVPU scale. • Check SBP, pulse, RR, temp.
<p>1. 25-year-old female is brought to the hospital by family, because she is convulsing.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: no ABC signs, identify convulsing. • Protect patient from falling. • Manage airway and assist patient into a recovery position: no AB signs, patient seems drowsy/lethargic. • Give oxygen 5 litres. • Call for help. • Check glucose-tell participant that it is 70 mg/dl on fingerstick. • Check AVPU. • Give patient diazepam. • Ask participant to explain how to administer diazepam (50 kg adult initial dose: 10 mg IV; 20 mg PR). • Check SBP, pulse, RR, temp. • Give patient next dose after 10 minutes if still convulsing.
<p>2. 29-year-old pregnant female in third trimester is convulsing.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: no ABC signs, identify convulsing. • Protect patient from falling. • Manage airway and assist patient into a recovery position (left side). • Give oxygen 5 litres. • Call for help. • Check glucose-tell participant that it is 80 mg/dl on fingerstick. • Check AVPU. • Give diazepam • Give magnesium sulphate. • Check SBP, pulse, RR, temp.
<p>3. 75-year-old male was waiting in the queue to be seen and is now slumped on the floor.</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • QC: no ABC signs, identify altered consciousness. • Protect the patient from falling. • Manage airway and assist patient into a recovery position. • Give oxygen 5 litres. • Call for help.

	<ul style="list-style-type: none"> • Unable to check glucose because no fingerstick available. • Give glucose. • Check AVPU: responds to voice. • Check SBP, pulse, RR, temp – BP 95/60, P 108, RR 18, 40 deg Celsius. • Send emergency labs. • Give empiric antibiotics (do blood culture first if available). • Give antimalarial if appropriate. • Insert IV, start fluids.
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Exam scenarios for shock/ severe respiratory distress	Steps needed
<p>1. 25-year-old pregnant woman in her 3rd trimester comes to the emergency ward, because she is “very weak.” Her husband says that for the past 2 days she has had a fever and cough. She looks like she is having difficulty breathing. She is hunched over and is unable to speak in complete sentences. You have noticed several patients with similar symptoms come to the hospital.</p> <p>Vital signs: RR 37/min BP 84/62 HR 132/min T 39 SpO₂ 84</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • Give oxygen 5 L NC. • Insert IV and give 1 L NS bolus over 30 min. • Consult DC. • Send labs (especially for Hb, glucose and blood cultures). • Give IV ceftriaxone, antimalarials if appropriate and consider antivirals for suspected influenza, plus paracetamol. • Ask participant to document all treatments given in severely ill patient monitoring form. • Repeat vitals after 30 minutes: • RR 40/min HR: 125/min BP 80/60 SpO₂ 86 • Ask participant to update monitoring form. • What should be done now? • Increase oxygen to 7 LPM via FM • Give 20 ml/kg/hour IV NS or LR
<p>2. 50-year-old male was admitted to the ward with pneumonia. When you check on him, you note that he appears to be breathing very fast, shallow, and only able to speak 1-2 words at a time. He is not on oxygen. You call for help and ask the nursing assistant to get you oxygen. While waiting for the oxygen to arrive you check his vital signs.</p> <p>Vital signs: RR: 34 HR: 125 T: 37°C BP: 130/80 SpO₂: 88</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • Start at 5 L via NC. • Ask participant: How often would you monitor the SpO₂? • Answer: Every 30 minutes until stable.
<p>3. A patient is admitted to the ward with sepsis and a urinary tract infection. The patient was given a 1 litre bolus of normal saline. The repeat blood</p>	<ul style="list-style-type: none"> • Have participant demonstrate how they would help this patient. • Give IV normal saline at 20 ml/kg/hour (1.1 litre)

pressure is 70/30. Patient weighs 55kg.	<ul style="list-style-type: none">• Repeat BP after another litre is 75/35. Patient has received 3.2 Litres of IV fluids after 2 hours and urine output is minimal.• What should you do now?• Consider vasopressors. Discuss with senior clinician.
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For hospital practical competency exam:

1. Participants should go to hospital in small groups with facilitators.
2. Facilitators can assign consecutive patients for each participant to triage. Have each participant triage 3 patients.
3. Again if an emergency sign is identified, the ward clinician or senior nurse (as planned ahead of time) should be informed.
4. Participants should provide an oral answer to facilitator demonstrating what first-line treatments they will administer to patients.

Scoring:

- Each participant should be able to pass 1 clinical scenario in each section. If they get a scenario incorrect, repeat with a new scenario. If they continue to get the clinical scenarios incorrect, then they do not pass that portion of the practical exam. For the triage and treatments portion of the exam in the hospital, each participant should be able to provide the correct triage and treatment steps for a minimum of 2 to 3 patients.
- The practical competency exam is pass/fail. Participants who require more help should be given additional explanation in order to fully understand the material and retake the exam.

EPT Case Scenarios: Quick Check+

- Copies of cases (1 for each EPT)
- Chairs/tables set up for clinical encounter
- Medical equipment/supplies for cases

If time permits, demonstrate CASE 1 with facilitator and EPT or 2 facilitators

Directions for first day:

Participants should be expected to recognize whether the sign is an emergency, priority or non-urgent sign and tell EPT where to go for further management-emergency sign-get immediate help, priority sign-front of queue, non-urgent sign-wait in queue. Tell the participants to say aloud to the EPT if they have an emergent, priority or non-urgent sign.

These cases are quick, so should not take longer than 5 minutes per case including feedback. Explain to participants that today will allow them to practice with the EPTs and understand what they need to prepare for the following day. They will provide first line emergency treatment for airway and breathing signs today. However, starting on day 2, they will be expected to provide all the emergency treatments.

CASE 1: Triage

Case summary to read to participants:

50 year-old patient is waiting in triage with severe knee pain.

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Triage-severe knee pain

Description for EPT:

You are a 50 year-old patient who is waiting in triage at the hospital. You have had knee pain for the past week, and it seems to be getting worse. Your knee is now swollen and aching. You work as a cleaner and have not been able to work due to this pain. When you see the participant, limp towards him/her holding your right knee. You should appear as if in pain. If the participant asks you about your pain, explain where the pain is and complain that you are unable to work and that it is hurting you stand in this long line.

Critical actions:

Category	Critical action	Check if done
Do Quick Check	Recognize non-urgent sign	
Manage sign	Explain that she will need to wait in the queue as there are patients with emergencies being helped right now, but someone will help her with her problem as soon as possible.	

CASE 2: Triage

Case summary:

80 year-old patient slumped in chair with eyes closed.

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Triage-unconsciousness

Description for EPT:

Use a chair for the prop. You are an 80 year-old man who was waiting to be seen at the outpatient department of the hospital because you have been feeling very sick, weak and confused. While sitting in the queue, you have become unconscious. You should appear crumpled over in the chair unconscious. If the participant, talks to you, do not answer. If the participants, shakes your arm, keep it limp. Participant should recognize that you are unconscious and call for help for this emergency sign.

Critical action:

Category	Critical action	Check if done
Do Quick Check	Recognize emergency sign-altered level of consciousness	
Manage sign	Call for immediate help for emergency sign.	

CASE 3: Triage

Case summary:

51 year-old man presenting with chest pain.

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Triage-chest pain

Description for EPT:

You are a 51 year-old business man who is visiting his sick mother in the hospital. You are under a lot of stress between work and her sickness. While going up the stairs to see her, you start feeling an uncomfortable pressure in your chest. You sit down and but the pressure is getting worse. If asked by participant, say that you have never experienced pain like this before. You should appear as if ill and sweating. You should look uncomfortable, wipe brow, and breathe faster. You should sit hunched over as if in pain. When participant asks about your pain, describe the pain with a clutched hand over chest in fist as if you have an elephant sitting on your chest. You should have some difficulty in talking due to the pain.

Critical action:

Category	Critical action	Check if done
Do Quick Check	Recognize emergency sign-pain from life-threatening cause	
Manage sign	Provide immediate help for emergency sign.	

CASE 4: Triage

Case summary:

67 year-old patient presenting with cough and fever.

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Triage-cough

Description for EPT:

You are a 67 year old patient who comes to the hospital for severe cough and fever. You should appear sick, coughing, weak, chills. When the participant asks you to speak, you can speak in sentences. If the participant asks about breathing, say that you are having some trouble in catching your breath. Show that you have some problem with breathing by breathing more rapidly, but not severe.

Critical action:

Category	Critical action	Check if done
Do Quick Check	Recognize priority sign-any respiratory distress	
Manage sign	Tell participant to come to front of line to be given priority.	

CASE 5: Triage

Case summary:

67 year-old patient presents with difficulty breathing. The patient is standing in the long queue at the hospital registration desk.

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Triage-severe respiratory distress

Description for EPT:

You are a 67 year-old patient who has been sick with cold-type symptoms in the past day (fever, cough, body aches, fatigue, and runny nose). You think that you may have picked it from work. You work as a ticket seller at the local bus station. You come to hospital because you just cannot catch your breath. You should appear ill, coughing, wiping your nose as if it is runny. Your breathing should look laboured and rapid. If the participant asks you to speak, you cannot speak in sentences since you are having so much problems breathing. You are hunched over, unable to lie down, and appear uncomfortable. The participant should recognize that you have an emergency sign for airway and breathing and direct you to come with them right away for further treatment.

Critical actions:

Category	Critical action	Check if done
Do Quick Check	Recognize emergency sign-breathing	
Manage sign	Provide immediate help for emergency sign	

CASE 6: Quick Check: Airway and Breathing

Case summary:

24 year old patient presents with difficulty breathing.

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Airway obstruction

Description for EPT:

You have been very sick at home with fever, shortness of breath and coughing up blood. When you come in, you are very weak, having a hard time to stay awake and must lie down. When participants ask you what is wrong, roll over and become unconscious and make a gurgling noise as if you cannot breathe. The participant should assess your airway and ask if you have an airway sign. The facilitator will say that you do. The participant should then recognize that your tongue may be blocking your airway, tilt your head back and chin up to try to open your airway, place an oropharyngeal airway device and help your breathing with bag valve mask device and oxygen. Once the participant does this, open your eyes.

Critical actions:

Category	Critical action	Check if done
Assess airway/breathing	Recognize airway obstruction	
Manage airway/breathing	Open airway-head tilt chin lift	
Manage airway/breathing	Place airway device	
Manage airway/breathing	Assist ventilation with BVM	
Manage airway/breathing	Give oxygen 5 L	

CASE 7: Quick Check: Airway and Breathing

Case summary:

34 year old patient presents from home with difficulty breathing and an itchy rash after taking an antibiotic for a tooth infection.

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Airway obstruction-anaphylaxis

Description for EPT:

You are having a severe allergic reaction to a medication. You should appear uncomfortable and not be sitting still. You should say that you took a new medication and then started to get a itchy rash all over your body. Now you are having difficulty breathing. When you talk you should stop every few words and take a very deep breath make a loud "stridorous" breathing noise [will learn how to make stridor noise in training]. As the participant is assessing you, you should become more agitated; say that you are having increased difficulty breathing and feel like your throat is swelling. The participant should recognize that you are having a severe allergic reaction and airway obstruction. They should give you a shot of epinephrine [will use first line emergency treatment card sort to give management]. If they do not give you epinephrine, you should become more and more distressed until you become unresponsive. If they do give you adrenaline, you should start to feel improved.

Critical actions:

Category	Critical Action	Check if done
Assess airway/breathing	Recognize airway obstruction/anaphylaxis	
Manage airway/breathing	Give epinephrine	

CASE 8: Quick Check: Airway and Breathing

Case summary:

42 year-old patient was brought in by family after being found lethargic at home in bed. The patient had been sick for several days with fever and diarrhoea. The patient's lips look blue.

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Airway obstruction-unconscious patient

Description for EPT:

You are a severely ill patient who is unconscious. You should be lying on the table, not talking, and not following any commands. If the participant tries to move you or pinch your arm, you should try to pull away and moan. You are breathing spontaneously, but you make a gurgling noise when you breathe. The participant should recognize that you are in a coma and have an obstructed airway. They should try to open your airway, place an oral or nasal airway [using first line emergency treatment cards], and give you oxygen. If they do these things your breathing should begin to sound normal. The participant should then check your pulse oximetry.

Critical actions:

Category	Critical Action	Check if done
Assess airway/breathing	Recognize airway obstruction	
Assess airway/breathing	Recognize cyanosis	
Manage airway/breathing	Call for help	
Manage airway/breathing	Open airway	
Manage airway/breathing	Place airway device	
Manage airway/breathing	Give oxygen	
Assess airway/breathing	Check pulse oximetry	

CASE 9: Quick Check: Airway and Breathing

Case summary:

18 year-old patient was brought in on a stretcher after falling off of a ladder. He is unconscious and has bleeding from a wound on his head and his mouth is filled with blood and secretions.

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Airway obstruction-unconscious/trauma

Description for EPT:

You have fallen off of a ladder and have a severe head injury. You should be unconscious, not following any commands, and not speaking. You are breathing spontaneously, but should make a gurgling noise when you inhale. The participant should recognize that your airway is obstructed. The participant should open your airway using the jaw thrust. Your neck should remain still. The participant should clear your airway of secretions, place an airway device [using treatment cards], and give you oxygen. When these things are done you should remain unconscious, but your breathing should now be normal.

Critical actions:

Category	Critical Action	Check if done
Assess airway/breathing	Recognize airway obstruction	
Manage airway/breathing	Call for help	
Manage airway/breathing	Open airway	
Manage airway/breathing	Clear secretions	
Manage airway/breathing	Place airway device	
Manage airway/breathing	Give oxygen	
Assess airway/breathing	Check pulse oximetry	

CASE 10: Quick Check: Airway and Breathing

Case summary:

44 year old patient presents with 2 days of cough, fever, and difficulty breathing. You can hear audible wheezing coming from the patient.

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Severe respiratory distress-pneumonia

Description for EPT:

You have a severe pneumonia. You should be in severe respiratory distress, breathing very fast, and using accessory muscles to breath. You should be able to tell the participant that you are having difficulty breathing, and have had cough and fever for 2 days. When you are talking you should stop every few words to try to take a deep breath. The participant should recognize that you are in severe respiratory distress. He should place you in a comfortable position, and give you oxygen. You are audibly wheezing. The participant should give you salbutamol. You should then begin to breathe more comfortably. The participant should count your respiratory rate (which should be greater than 30) and measure your pulse oximetry. The participant should recognize that you have fever and a respiratory rate greater than 30, and give you antibiotics to treat pneumonia.

Critical actions:

Category	Critical Action	Check if done
Assess airway/breathing	Recognize severe respiratory distress	
Manage airway/breathing	Call for help	
Manage airway/breathing	Place in comfortable position	
Manage airway/breathing	Give oxygen	
Manage airway/breathing	Give salbutamol	
Assess airway/breathing* (secondary assessment)	Check oxygen saturation	
Assess airway/breathing* (secondary assessment)	Check RR	
Manage airway/breathing* (urgent management)	Give antibiotics	

CASE 11: Quick Check: Circulation

Case summary:

34 year old patient presents from home with fever and chills for 2 days. The patient was carried in by her family and appears very weak. The patient has NO quick check emergency signs of airway/breathing.

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Shock-sepsis

Description for EPT:

You are in septic shock. You should be breathing normally. You should appear very weak. You are able to stand to get onto the exam table but you need assistance. You should tell the participant that you have been having fever and chills for 2 days. The participant should feel for your pulse and assess your capillary refill. The facilitator will then tell the participant that your pulse is weak and your capillary refill is delayed. The participant should recognize that you have emergency circulation signs and ask to check your pulse and blood pressure. The facilitator will tell the participant:

Pulse 130 BP 80/40

The participant should insert an IV and give a rapid fluid bolus, cover you and keep you warm. If the participant asks if you are pregnant you should answer no. If the participant asks you about other symptoms tell him that you have been having urinary frequency and urgency for 2 days, nausea, and vomiting. The participant may then ask for the rest of your vital signs.

T 39.0 RR 26 sat 96% on room air.

The participant may then decide to treat you with paracetamol, antibiotics, and antimalarials. If the participant asks for a repeat blood pressure after the fluid bolus, the repeat vitals are:

HR 110 BP100/50

CASE CONTINUES ON NEXT PAGE

CASE 11 continued:

Critical actions:

Category	Critical Action	Check if done
Assess circulation	Recognize weak and fast pulse and delayed cap refill	
Manage circulation	Call for help	
Assess circulation	Ask for BP and HR	
Assess circulation	Ask if pregnant (if female EPT)	
Manage circulation	Insert IV	
Manage circulation	Give IVF bolus NS/LR	
Manage circulation	Keep warm	
Manage circulation* (urgent management)	Give paracetamol	
Manage circulation* (urgent management)	Give antibiotics	
Manage circulation* (urgent management)	Give anti-malarials	

CASE 12: Quick Check: Circulation

Case summary:

27 year-old patient presents from home with profuse, watery diarrhoea for 1 day and several episodes of vomiting. 2 other people in the home are sick with similar illness. The patient has NO quick check emergency signs of airway/breathing

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Shock-dehydration/diarrhoea

Description for EPT:

You are severely dehydrated and in shock from diarrhoea. You should appear very weak and be lying on a cot. You should be able to answer questions, but don't volunteer any information. If the participant asks if there has been any blood in your stool you should answer no. The participant should check your pulse and capillary refill. The participant should recognize emergency signs of circulation and ask for your BP and HR.

BP 75/45 HR 125

The participant should recognize that you are in shock and should place an IV and give an IVF bolus. As the fluid begins to run, you should start to feel better.

Critical actions:

Category	Critical Action	Check if done
Assess circulation	Recognize weak and fast pulse and delayed cap refill	
Manage circulation	Call for help	
Assess circulation	Ask for BP and HR	
Assess circulation	Ask if pregnant (if female EPT)	
Manage circulation	Insert IV	
Manage circulation	Give IVF bolus NS/LR	
Manage circulation	Keep warm	

CASE 13: Quick Check: Circulation

Case summary:

64 year old patient who has known end stage liver disease presents with multiple episodes of vomiting bright red blood. The patient appears very pale. The patient currently has NO quick check emergency signs of airway/breathing

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Shock- Gastrointestinal bleed

Description for EPT:

You are a severely ill patient with a massive gastrointestinal bleed. You should appear very weak but are able to answer questions and have a normal mental status. You are breathing normally. If asked, you can say that you have had 4 episodes of vomiting bright red blood since the morning. You are also having severe pain in the upper part of your abdomen. The participant should check you for weak or fast pulse, delayed capillary refill. During the assessment you should have an episode of bloody emesis. The participant should recognize emergency signs of circulation and ask for a BP and HR

BP 85/40 HR 115

The participant should place an IV and start an IVF bolus. If a bolus of fluid is not given you should become weaker and go unconscious. If a fluid bolus is given you should start to feel improved.

Critical actions:

Category	Critical Action	Check if done
Assess circulation	Recognize weak and fast pulse and delayed cap refill	
Assess circulation	Recognize heavy bleeding	
Manage circulation	Call for help	
Assess circulation	Ask for BP and HR	
Assess circulation	Ask if pregnant (if female EPT)	
Manage circulation	Insert IV	
Manage circulation	Give IVF bolus NS/LR	
Manage circulation	Keep warm	
Manage circulation	Send blood for Hgb and type and cross	

CASE 14: Quick Check: Circulation

Case summary:

24 year old female presents with acute onset of severe abdominal pain. The patient has NO emergency signs of airway or breathing.

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Shock-ruptured ectopic pregnancy

Description for EPT:

You are in shock and have a ruptured ectopic pregnancy. You should present doubled over in pain and moaning. If asked, say you had pain starting 2 hours ago. When asked, you think that you may be pregnant. You have been nauseous and vomiting for several weeks. You have not had any vaginal bleeding. The participant should recognize that you have a weak and fast pulse and delayed capillary refill. The participant should place an IV and start an IVF bolus. If the participant does these things you should start to feel better. If the participant does not do these things you should become unconscious

CASE CONTINUED ON NEXT PAGE

CASE 14 continued:

Critical actions:

Category	Critical Action	Check if done
Assess circulation	Recognize weak and fast pulse and delayed cap refill	
Manage circulation	Call for help	
Assess circulation	Ask for BP and HR	
Assess circulation	Ask if pregnant /check pregnancy test	
Manage circulation	Insert IV	
Manage circulation	Give IVF bolus NS/LR	
Manage circulation	Keep warm	
Manage circulation	Send blood for Hgb and type and cross	
Manage other	NPO	
Manage circulation* (urgent)	Arrange to go to OR	
Manage (urgent)*	Give pain medication	

CASE 15: Quick Check: Circulation

Case summary:

34 year-old female was brought in by her family after having heavy bleeding and severe abdominal pain. The patient has NO emergency signs of airway or breathing.

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Shock-pregnant

Description for EPT:

You have been bleeding and have a serious abdominal pain. You are 7 months pregnant, but should not volunteer the information unless it is asked. You should appear to be in distress, moaning in pain, and holding your stomach. You are breathing normally. The participant should check your pulse and capillary refill and recognize emergency signs of circulation. The participant should ask if you are pregnant and when you say yes, have you lie on your left side. The participant should ask for a BP and HR:

BP 80/40 HR 110

The participant should place an iv and start an IVF bolus. If the fluid is not started you should become unconscious. You should continue to moan in pain, until the facilitator says the case has stopped.

Critical actions:

Category	Critical Action	Check if done
Assess circulation	Recognize weak and fast pulse and delayed cap refill	
Assess circulation	Recognize shock	
Manage circulation	Call for help	
Assess circulation	Ask for BP and HR	
Assess circulation	Ask if pregnant /check pregnancy test	
Manage circulation	Assist to move to left side	
Manage circulation	Insert IV	
Manage circulation	Give IVF bolus NS/LR	
Manage circulation	Keep warm	
Manage circulation	Send blood for Hgb and type and cross	
Manage other	NPO	
Manage circulation* (urgent)	Arrange to go to OR	
Manage (urgent)*	Give pain medication	

CASE 16: Quick Check: Consciousness/ Convulsing

Case summary:

24 yo patient brought in on a stretcher after fainting in a restaurant. The patient is now unconscious. The patient does not appear to be cyanotic and is breathing normally. The patient has NO emergency signs of circulation.

Altered consciousness-hypoglycaemia

Description for EPT:

You are a diabetic who is now unconscious after your blood sugar became very low. You should be unconscious and not provide any history. You should be breathing normally. If the participant asks for your vital signs they are:

BP 120/60 HR 65 RR 22 T 36.0 Sat 95%

The participant should open your airway and place you in the recovery position, give oxygen, place an IV and give glucose. Once the glucose is given you should wake up. If the glucose is not given you should stay unconscious.

Critical actions:

Category	Critical Action	Check if done
Assess airway	Recognize airway is intact, but patient is altered so need to protect airway	
Assess circulation	Recognize no emergency signs of circulation	
Assess Altered consciousness	Recognize altered consciousness	
Assess	Ask if pregnant (if female EPT)	
Manage	Call for help	
Manage Altered consciousness	Protect from fall/injury	
Manage airway	Place in recovery position	
Manage airway	Give oxygen	
Manage altered consciousness	Give glucose	
Manage altered consciousness	Record AVPU	

CASE 17: Quick Check: Consciousness/ Convulsing

Case summary:

28 yo patient presents with fever for 1 day. The patient has NO emergency signs of airway, breathing, or circulation

Altered consciousness-lethargic/meningitis

Description for EPT:

You are very ill with meningitis. You should be confused and not answering questions appropriately. Your neck is stiff and you should not be moving it around and the light is bothering your eyes. You can answer your name, but otherwise are just speaking words but not making sense. If the participant asks for your vital signs they are:

T 39.0 BP 125/60 HR 110 RR 18

The participant should recognize that your mental status is altered, protect you from falling, place you in the recovery position, give you oxygen and glucose. Your mental status should stay the same until the facilitator says the case is finished.

Critical actions:

Category	Critical Action	Check if done
Assess airway	Recognize airway is intact, but patient is altered so need to protect airway	
Assess circulation	Recognize no emergency signs of circulation	
Assess Altered consciousness	Recognize altered consciousness	
Assess	Ask if pregnant (if female EPT)	
Manage	Call for help	
Manage Altered consciousness	Protect from fall/injury	
Manage airway	Place in recovery position	
Manage airway	Give oxygen	
Manage altered consciousness	Give glucose	
Manage altered consciousness	Record AVPU	
Manage altered consciousness (urgent)*	Give paracetamol	
Manage altered consciousness (urgent)*	Lumbar puncture	
Manage altered consciousness (urgent)*	Antibiotics	

CASE 18: Quick Check: Consciousness/ Convulsing

Case summary:

37 yo patients presents from home. The family does not know what has happened.

Convulsing-hypoglycemia

Description for EPT:

You are having a generalized tonic clonic seizure. You should be unconsciousness and not responding to any questions. The participant should recognize that you are convulsing. The participant should give you diazepam and glucose. You are having a convulsion because your blood sugar is low, so your convulsion should not stop until you are given glucose. Once you are given glucose you should stop convulsing and gradually wake up, but still be confused. When you are awake, you can tell the participant that you think you may have taken your uncles diabetes medication when you meant to take an aspirin.

Critical actions:

Category	Critical Action	Check if done
Assess alteration consciousness/convulsing	Recognize patient is having a convulsion	
Assess	Ask if pregnant (if female EPT)	
Manage	Call for help	
Manage convulsion	Protect from fall/injury	
Manage airway	Place in recovery position	
Manage airway	Give oxygen	
Manage altered consciousness	Give glucose	
Manage convulsion	Give diazepam	
Manage altered consciousness	Record AVPU	

CASE 19: Quick Check: Consciousness/ Convulsing

Case summary:

32 yo female is brought in by her family because she is not acting right

Convulsing-eclampsia

Description for EPT:

You had a baby 3 days ago and have eclampsia. You have been confused today and when the participant starts to examine you, you should begin to have a generalized tonic clonic seizure. The participant should ask your family if you are pregnant or recently pregnant, place you in the recovery position, give glucose, diazepam, and magnesium. Once you have gotten the glucose and diazepam you should stop seizing. If you are not given the magnesium, you should begin to seize again until you are given the magnesium. If asked for your vital signs are:

T 37.0 BP 140/80 HR 115 RR 26

Critical actions:

Category	Critical Action	Check if done
Assess alteration consciousness/convulsing	Recognize patient is having a convulsion	
Assess	Ask if pregnant (if female EPT)	
Manage	Call for help	
Manage convulsion	Protect from fall/injury	
Manage airway	Place in recovery position	
Manage airway	Give oxygen	
Manage altered consciousness	Give glucose	
Manage convulsion	Give diazepam	
Manage convulsion	Give magnesium	
Manage altered consciousness	Record AVPU	

CASE 20-SEPTIC SHOCK

Case summary

SY is an 18 year-old female presented to the emergency clinic supported by family who has had cough with rusty sputum and fever for 10 days which gets worse in the last couple of days.

Description for EPT/facilitator:

SY is an 18 year-old female presented to the emergency clinic supported by her family members. Her mother states that SY had cough with rusty sputum and fever for 10 days which gets worse in the last couple of days.

SY is alert but breathless and can't speak more than a word. Her lips are bluish and she uses accessory muscles of respiration around the neck. Her pulse is fast and weak.

RR: 40 BP:60/30 T: 40 SO2: 84%

Record this patient's clinical data in the monitoring form.

What actions are needed?

After 30 minutes.

RR: 32 BP: 70/40 PR: 140 SO2: 88%

Update the monitoring form

Ideally, how much fluid should the patient have received by this time?

What actions are needed?

After 60 minutes

RR: 32 BP: 70/40 PR: 140 SO2: 88%

Update the monitoring form

What actions are needed?

- Increase oxygen to 10L via FM with reservoir
- Continue IVF at 20 ml/kg/hour (up to 60 ml/kg) within first 2 hours

After 2 hours

RR 28 BP 80/40 PR 120 SO2 91%

Update the monitoring form

What actions are needed?

CASE 21-SEPTIC SHOCK

Presentation

SP is a 33 year-old female who was brought into the hospital by her family for weakness. Her family states she has had a fever for several days and was complaining of pain to her left flank. On initial evaluation SP is noted to be breathing comfortably, at a regular rate, and without any evidence of respiratory distress. You check her radial pulse and note that her pulse is very weak and fast and her capillary refill is delayed. She is responsive to voice, but unable to keep eyes open and not responding appropriately to questions. Her weight is 50kg.

What first line emergency treatments are needed?

RR: 26 BP:60/40 T: 40 PR: 130 SO2: 96% on room air

Record this patient's clinical data in the monitoring form.

What actions are needed?

After 30 minutes.

RR: 28 BP:80/40 PR: 120 SO2: 96%

Update the monitoring form

What actions are needed?

After 60 minutes

Mental status is improving and she tells you that she started antibiotics for a urine infection yesterday.

RR: 36 BP: 90/60 PR: 120 SO2: 96%

Update the monitoring form

What actions are needed?

After 120 minutes:

SP is awake and alert and states she is feeling better

RR: 24 BP: 100/60 PR: 100 T 37.5 SO2: 96%

Update the monitoring form

What actions are needed?

List the benchmarks achieved?

In total, how much intravenous fluid did SP receive?

How often would you now monitor SP?

CASE 22-SEPTIC SHOCK

Presentation

HJ a 50 year-old HIV positive male who was brought into the hospital complaining of 3 days of watery diarrhea and fever. Patient has no emergency signs of airway and breathing. His pulse is weak and fast, with delayed capillary refill. He is alert and able to answer questions. Estimated weight is 70 kg.

What first line emergency treatments are needed?

RR: 24 BP:90/60 T: 39 PR: 125 SO2: 96% on room air

Record this patient's clinical data in the monitoring form.

What actions are needed?

After 30 minutes.

RR: 28 BP: 80/40 PR: 120 SO2: 96%

Update the monitoring form

What actions are needed?

After 60 minutes

Mental status is worsening.

RR: 36 BP: 70/30 PR: 130 SO2: 96%

Update the monitoring form

What actions are needed?

After 120 minutes (2 hours):

RR: 34 BP: 70/30 PR: 122 T 38.0 SO2: 96%

Update the monitoring form

What actions are needed?

After 3 hours

RR 32 BP 80/40 PR 115 SO2 94%

Update the monitoring form

What actions are needed?

After 4 hours

RR 28 BP 80/40 PR 120 SO2 93%

Update the monitoring form

What actions are needed?

After 5 hours

RR 24 BP 90/60 PR 110 T 37.6 SO2 92%

Update the monitoring form

What actions are needed?

After 6 hours

RR 22 BP 110/70 PR 100 SO2 92%

Update the monitoring form

What actions are needed?

List the benchmarks achieved?

How often would you now monitor HJ?

CASE 23-SEVERE RESPIRATORY DISTRESS AND SHOCK

TG is a 30 years male know HIV positive since 6 months but not on ART. He was initially started on cotrimoxaole but discontinued since last 3 months due to abdominal discomfort. He presented with dry cough and fever for 3 weeks. He is alert but restless. He is breathing fast and unable to speak a full sentence. His lips appear blue. Estimated 50 kg.

RR: 44/min HR: 130/min BP: 85/60 T: 39.5 SO2: 85%

White patches in the mouth

Bilateral lower lung crackles

List any quick check emergency signs that are present.

- **Severe respiratory distress and shock**

What first line emergency treatments would you start?

- **Start oxygen at 5 L via NC**
- **Insert IV and give IV NS or LR fluid bolus with 1 L**

What urgent treatments would you give?

- **Give antimicrobials: antibiotics, antimalarias (if endemic area) and antivirals (if influenza season)**
- **Treat PCP pneumonia if suspected**
- **Send indicated initial laboratory investigations, include chest radiograph**

How often would you monitor the patient?

Every 30 minutes.

Record the patient's clinical data using blank severe illness monitoring form

After 30 minutes of arrival patient's breathing is still laboured and restless.

RR: 40/min HR: 120 BP: 100/60 SO2: 86%

The district clinician evaluated the patient and his chest X-ray and started CTX and prednisolone.

Update the monitoring form

What actions would you take?

- **Check oxygen supply, tubing and device on patient are functioning**
- **Increase oxygen flow rate to 7L/min and use face mask**

Patient re-evaluated after 60 minutes since arrival

He is calm and breathing is less labored now.

Ideally, how much fluid should the patient receive now?

- At least 1 L bolus over 1st 30 minutes and then 2 ml/kg/hr (100 ml/hr since he is 50 kg) now that BP stable

Vital signs:

RR: 32/min BP:100/60 HR: 110 T: 38 SO2: 90

Update the monitoring form

What action(s) are needed?

- Continue frequent monitoring every 30 minutes

List the benchmarks for this patient and circle which benchmarks were achieved.

Oxygen started

Oxygen saturation measured

IV started

Antibiotics

If wheezing, salbutamol given

If malarious area, antimalarial

Appropriate infection control

CASE 24-SEVERE RESPIRATORY DISTRESS

TR is a 26 years old male who presented with a one week history of difficulty breathing and wheezing. TR has a history of asthma and has no medications at home. Over the past week he has had slight cough, fever, myalgias. A family member was diagnosed with influenza H1N1 last week. Today his symptoms became much worse and he is in severe respiratory distress. He can speak 2-3 words at a time. He does not have upper airway obstruction. His pulse is strong and fast. His mental status is normal. Estimated wt is 60 kg.

List any quick check emergency signs that are present.

- Severe respiratory distress

What would you do for this patient?

- Give oxygen 5 L by nc
- Help patient assume position of comfort
- If wheezing, give salbutamol 2 puffs using spacer that is primed. Can give every 2 minutes if still with severe distress.
- Appropriate infection control

You check the vital signs and note:

RR: 44 BP:130/80 T: 38.6 PR: 120 SO2: 98% on 5 Lr

He is wheezing in both lungs

Record this patient's clinical data in the monitoring form.

What urgent treatments are needed?

- Insert IV and give 500 mL NS or LR

- **Give antimicrobials: antibiotics, antivirals for H1N1, antimalarials if endemic area**
- **Give salbutamol again.**

After 30 minutes.

Breathing is less laboured, but TR is still having diffuse inspiratory and expiratory wheezing. He can speak in full sentences now, but becomes very short of breath with minimal exertion.

RR: 28 BP:120/60 PR: 135 SO2: 98 % on 5L

Update the monitoring form

What actions are needed?

- **Continue salbutamol as needed for wheezing**
- **Encourage oral fluids and give IV fluids at 1 ml/kg/h**
- **Titrate oxygen to 2, check SpO2**

If TR is symptomatically improving why do you think his pulse rate is now higher?

- **Salbutamol increases the heart rate**

After 60 minutes

RR: 24 BP: 130/70 PR: 115 SO2: 95% 3 L nc

Update the monitoring form

What actions are needed?

- **Discontinue oxygen and check SpO2**

Circle the benchmarks achieved?

Oxygen started
Oxygen saturation measured
IV started
Antibiotics
If wheezing, salbutamol given
If malarious area, antimalarial
Appropriate infection control

In total, how much intravenous fluid did TR receive?

- **500 ml, then 1 ml/kg/h**

How often would you now monitor TR?

- **Every 30 minutes**