

Emergency and Critical Care for Universal Health Coverage



Information session for member states
27 October 2022

Emergency and Critical Care for Universal Health Coverage

Moderator: Dr Teri Reynolds, Unit Head, Clinical Services and Systems

- *Welcome Address* Dr Rudi Eggers, Director, Integrated Health Services
- *Emergency and Critical Care Toolkits* Dr Lee Wallis, Lead Emergency Care, Clinical Services and Systems
- *Country Case Study: Ethiopia* Dr Alegnta Gebreyesus Guntie, Attaché (health affairs), Permanent Mission of the Federal Democratic Republic of Ethiopia, Geneva
- *Strengthening services through emergency and critical care: Maternal and child health* Dr Allisyn Moran Unit Head, Maternal Health Unit
- *Questions & Answers* Dr Teri Reynolds, Unit Head, Clinical Services and Systems
- *Wrap up and end of session* Dr Lee Wallis, Lead Emergency Care, Clinical Services and Systems

Welcome Address

Dr Rudi Eggers

Director, Integrated Health Services

FIFTY-NINTH WORLD HEALTH ASSEMBLY
Agenda item 11.14

A59/20
24 May 2006

Emergency preparedness and response

SIXTIETH WORLD HEALTH ASSEMBLY

WHA60.22

Agenda item 12.14

23 May 2007

Health systems: emergency-care systems

SIXTY-EIGHTH WORLD HEALTH ASSEMBLY

WHA68.15

Agenda item 17.1

26 May 2015

Strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage

SEVENTY-SECOND WORLD HEALTH ASSEMBLY

WHA72.16

Agenda item 12.9

28 May 2019

Emergency care systems for universal health coverage: ensuring timely care for the acutely ill and injured



World Health Organization

SEVENTY-FIFTH WORLD HEALTH ASSEMBLY
Agenda item 16.2

WHA75.7
27 May 2022

Strengthening health emergency preparedness and response in cities and urban settings



Emergency and Critical Care Toolkits

Dr Lee Wallis

Lead Emergency Care, Clinical Services and Systems

Emergency, critical and operative care services for effective primary care

Teri A Reynolds,^a Ann-Lise Guisset,^a Suraya Dalil,^b Pryanka Relan,^a Shannon Barkley^a & Edward Kelley^a

Integrated, people-centred service delivery

- Emergency, Critical and Operative care services
- Linked to communities through Primary Care
- Communication, transport, referral and counter-referral

ECO-system

- These services and the mechanism that links them to the people who need them

Primary Health Care approach

- Longitudinal primary care relationships at the centre of the ECO-system
- Ensures timely and appropriate access to needed care across the life course



Emergency care for 10 SDG targets

- 3.1 Maternal Mortality: **Treat obstetric emergencies**
- 3.2 Under-five mortality: **Treat acute paediatric diarrhea and pneumonia**
- 3.3 Deaths from malaria and other diseases: **Treat acute infections and sepsis**
- 3.4 Reduce premature mortality from NCDs: **Treat acute exacerbations of NCDs**
- 3.5 Strengthen treatment of substance abuse: **Emergency care and harm reduction**
- 3.6 Halve road traffic deaths and injuries by 2020: **Post-crash care**
- 3.8 Achieve UHC: **Emergency care is essential**
- 3.9 Deaths and illnesses from hazardous chemicals: **Treat acute exposures**
- 11.5 Deaths caused by disasters: **Preparedness and response for resilience**
- 16.1 Violence-related deaths: **Treatment for victims of violence**



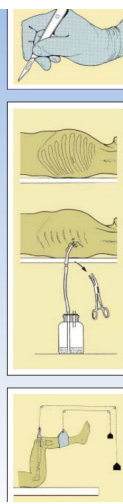
Integrated Clinical Care- IC2



World Health
Organization



**Surgical
 Care
 at the
 District
 Hospital**



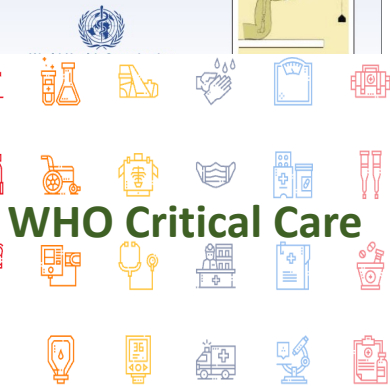
WHO's Integrated Clinical Care (IC2) Guidance

Learning programs and Toolkits

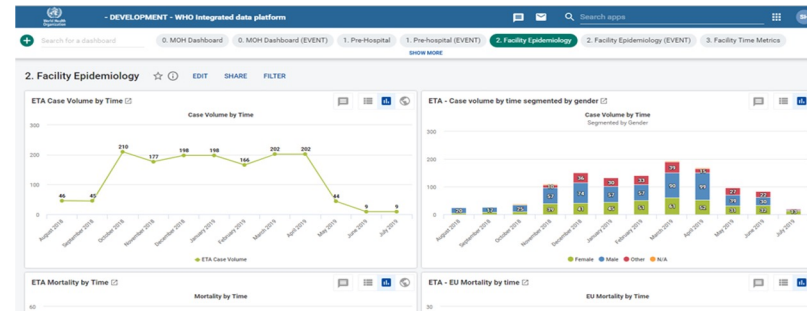
- Primary care
- Emergency & critical care
- Operative care
- Models of care & organization of services



PARTICIPANT WORKBOOK



WHO Critical Care



- Clinical decision & process tools with syndrome-based approaches
- Standardized clinical encounter forms
- Patient encounter forms and checklists
- Data Sets
- Clinical registry

WHEN DATA SAVES LIVES

World Health Organization

WHO International Registry for Trauma and Emergency Care

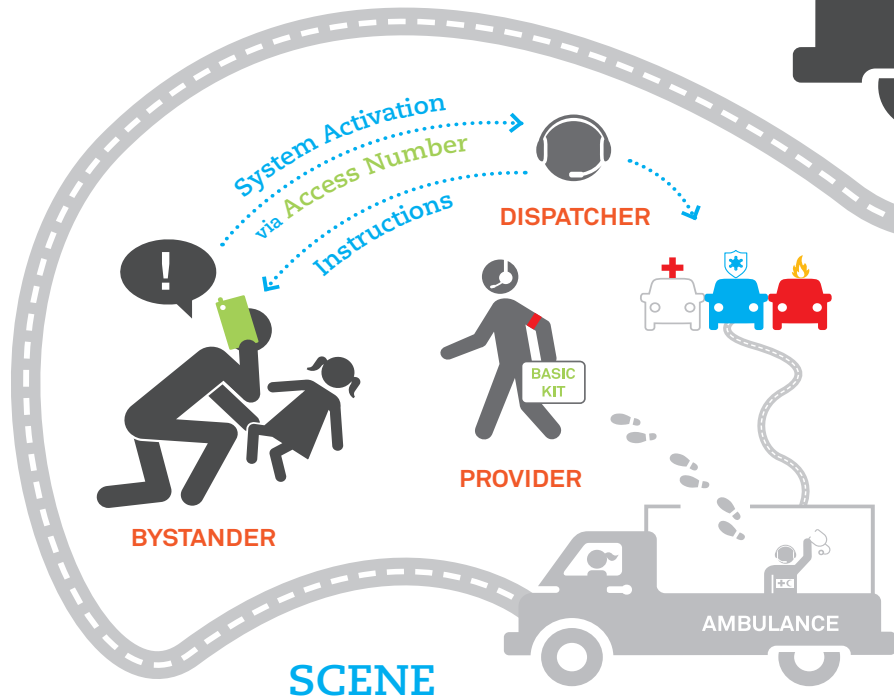
www.who.int/emergencycare

<p>A Airway</p> <p><input type="checkbox"/> Patent <input type="checkbox"/> Obstructed by: <input type="checkbox"/> Tongue <input type="checkbox"/> Blood <input type="checkbox"/> Secretions <input type="checkbox"/> Vomit <input type="checkbox"/> Foreign body <input type="checkbox"/> Vomit <input type="checkbox"/> Stridor <input type="checkbox"/> Angioedema <input type="checkbox"/> Oral/Airway burns</p> <p>B Breathing</p> <p>Spontaneous Resp: <input type="checkbox"/> Yes <input type="checkbox"/> No Chest Rise: <input type="checkbox"/> Nml <input type="checkbox"/> shallow <input type="checkbox"/> retractions <input type="checkbox"/> Paradoxical Trachea: <input type="checkbox"/> Midline <input type="checkbox"/> Deviated to CL <input type="checkbox"/> R Breath Sounds: <input type="checkbox"/> Nml <input type="checkbox"/> Abnormal: <input type="checkbox"/> L <input type="checkbox"/> R</p> <p>C Circulation</p> <p>Skin: <input type="checkbox"/> Normal <input type="checkbox"/> Warm <input type="checkbox"/> Dry <input type="checkbox"/> Pale <input type="checkbox"/> Cyanotic <input type="checkbox"/> Moist <input type="checkbox"/> Cool Capillary refill: <input type="checkbox"/> <2 sec <input type="checkbox"/> ≥2 sec <input type="checkbox"/> Absent Pulses: <input type="checkbox"/> Normal <input type="checkbox"/> Weak <input type="checkbox"/> Asymmetric JVD: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>D Neuro</p> <p>Consciousness: <input type="checkbox"/> A <input type="checkbox"/> V <input type="checkbox"/> P <input type="checkbox"/> U GCS: E: ___ V: ___ M: ___ Moves Extremities: <input type="checkbox"/> LUE <input type="checkbox"/> RUE <input type="checkbox"/> LLE <input type="checkbox"/> RLE Pupils: L: ___ R: ___ <input type="checkbox"/> Exposed completely</p> <p>E Exposure</p> <p>Peritoneum: <input type="checkbox"/> Negative <input type="checkbox"/> Indeterminate Free Fluid (where?): Pericardium: <input type="checkbox"/> Negative <input type="checkbox"/> Indeterminate Pericardial effusion: Chest: <input type="checkbox"/> Negative <input type="checkbox"/> Pneumothorax <input type="checkbox"/> Pleural fluid <input type="checkbox"/> Indeterminate</p>	<p>F Fast</p> <p>Peritoneum: <input type="checkbox"/> Negative <input type="checkbox"/> Indeterminate Free Fluid (where?): Pericardium: <input type="checkbox"/> Negative <input type="checkbox"/> Indeterminate Pericardial effusion: Chest: <input type="checkbox"/> Negative <input type="checkbox"/> Pneumothorax <input type="checkbox"/> Pleural fluid <input type="checkbox"/> Indeterminate</p>
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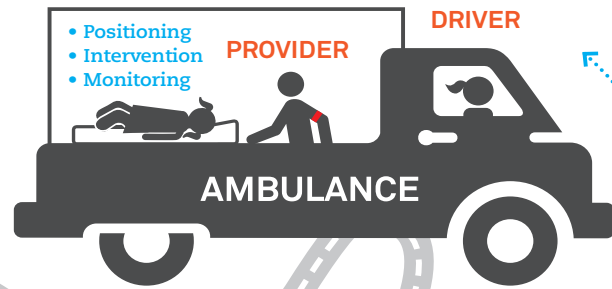
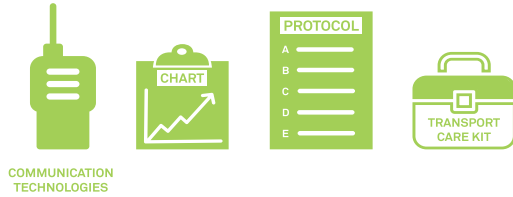
EMERGENCY CARE SYSTEM FRAMEWORK

All around the world, acutely ill and injured people seek care every day. Frontline providers manage children and adults with injuries and infections, heart attacks and strokes, asthma and acute complications of pregnancy. An integrated approach to early recognition and management reduces the impact of all of these conditions. Emergency care could address over half of the deaths in low- and middle-income countries.



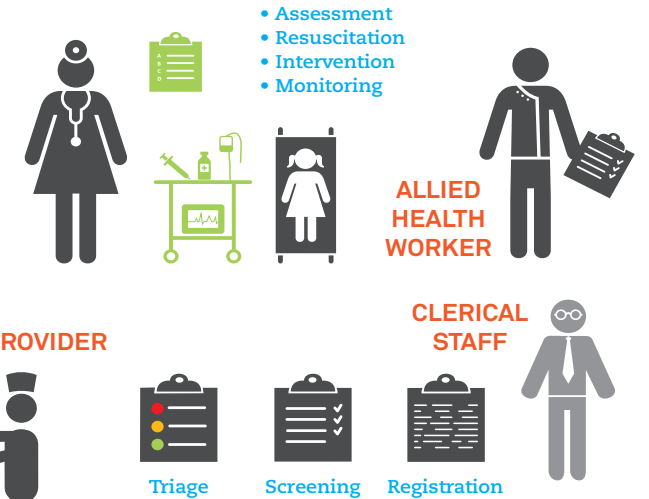
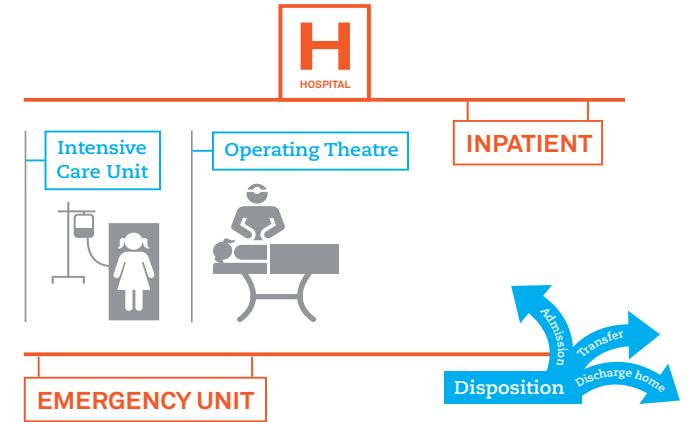
- BYSTANDER RESPONSE
- DISPATCH
- PROVIDER RESPONSE

■ HUMAN RESOURCES
 ■ FUNCTIONS
 ■ EQUIPMENT, SUPPLIES, INFORMATION TECHNOLOGIES



TRANSPORT

- PATIENT TRANSPORT
- TRANSPORT CARE



FACILITY

- RECEPTION
- EMERGENCY UNIT CARE
- DISPOSITION
- EARLY INPATIENT CARE

**National Roadmap:
Areas targeted for
priority action**

**Available Tools and
Resources**

**Developing
Prehospital
systems**

Standards &
Protocols for
prehospital
systems



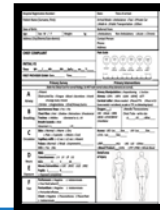
**Strengthening
surge
capacity**

EMT Toolkit

Mass
Casualty
Management
Course

**Standards for
QI and data**

WHO Clinical
Forms



WHO Registry
IRTEC



**Emergency
Care Training**

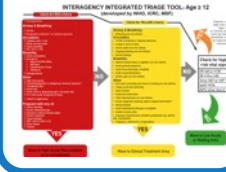
WHO Basic
Emergency
Care Course



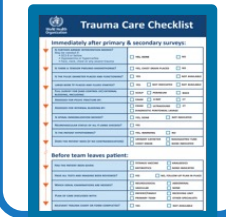
EU
Management
Course

**Formal Triage
and Other
Protocols**

Inter-agency
Integrated
Triage Tool



WHO clinical
checklists



**Policies to
improve
access to
emergency
care**



Country
sharing of
legislation

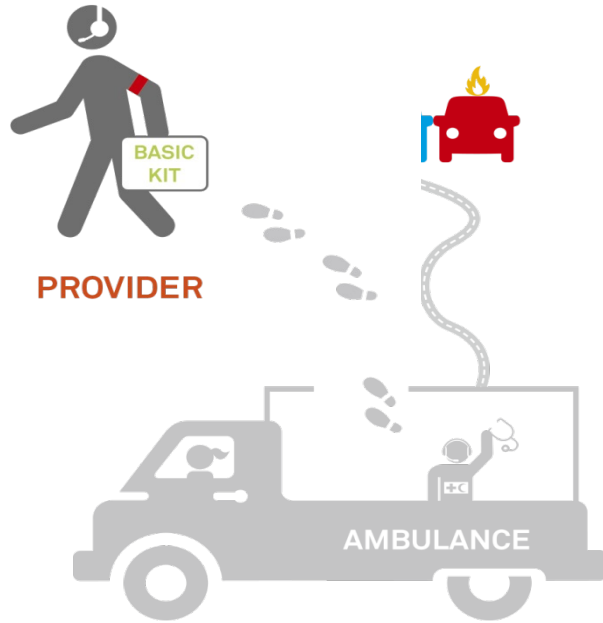
Prehospital Toolkit

- Standards and protocols to run operations
- Medical control manual to oversee care

Basic Ambulance Provider course to train providers to deliver care



BYSTANDER

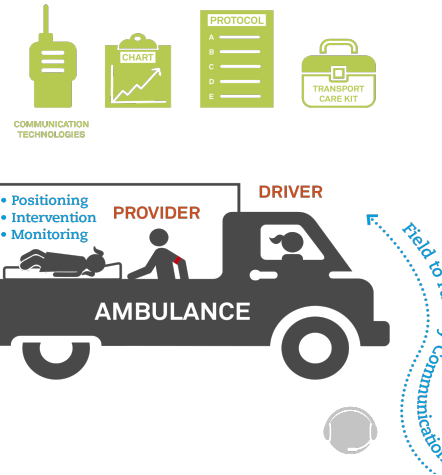


PROVIDER

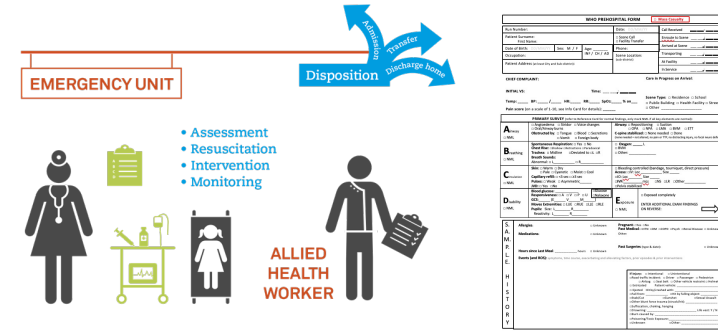
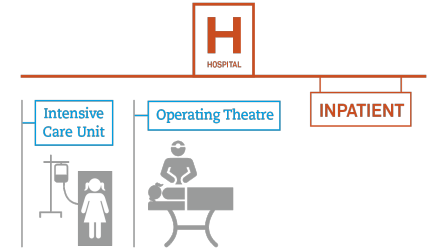
Community First Aid Responders (CFAR)

Clinical guidance to care for patients

XXX: STANDARD APPROACH TO PATIENT PROTOCOL		XXX: CHECKING PROTOCOL	
BASIC & ADVANCED	STANDARD	BASIC	ADVANCED
<p>Scene Survey</p> <ul style="list-style-type: none"> Identify threats to safety Call for additional resources as needed (advanced care, additional ambulances, police, fire department) Example: need police or additional assistance <p>Use Personal Protective Equipment</p> <ul style="list-style-type: none"> Gloves, goggles, masks, gowns as needed Isolate patient & concern for transmissible disease (ex. CBRNE) Arrange for decontamination if needed <p>Assess for signs of trauma:</p> <ul style="list-style-type: none"> Focus on life-threatening injuries, always consider trauma If evidence of trauma — airway collapse <p>Check responsiveness and determine AVPU</p> <p>Perform the ABCDE Assessment</p> <p>Manage any life-threatening conditions before moving on the distal exam</p> <p>Obtain Vital Signs</p> <ul style="list-style-type: none"> HR, RR, SpO₂, Oxygen Saturation (if available), ECG monitor (if available) <p>Perform a SAMPLE history</p> <p>Place patient in position of comfort</p> <p>Reassess frequently</p> <p>Transport patient to the most appropriate health facility</p> <p>Document the patient encounter and hand off to the receiving facility</p>	<p>This protocol should be used to begin all patient assessment. During this standard approach and as protocol to use, however not every situation will require contacting medical control or using this protocol on every patient.</p> <p>The ABCDE approach is designed to ensure that critical issues are identified and addressed immediately, before moving on to the next step. This approach is designed to be performed in the first 5 minutes and repeated when needed.</p> <p>PAEDIATRIC CONSIDERATIONS</p> <p>The ABCDE approach is used in both adults and paediatric patients that are different from adults. These are reviewed in the manual.</p> <p>Paediatric Danger Signs:</p> <ul style="list-style-type: none"> Signs of airway obstruction (nostril or mouth) (unable to breathe orally) Increased breathing effort (fast breathing, nasal flaring, grunting, chest indrawing or retractions) Cyanosis (blue color of the skin, especially at the lips and fingertips) Altered mental status (including lethargy or unusual sleepiness, confusion, disorientation) Altered level of consciousness (not responding to or recovery of all AVPU other than 'R') Not breathing well or cannot drink or breastfeed Stridor or wheezing Decreased consciousness Low body temperature (hypothermia) 	<p>1. Patient history</p> <p>2. Physical examination</p> <p>3. Vital signs</p> <p>4. SAMPLE history</p> <p>5. Reassessment</p> <p>6. Transport</p> <p>7. Documentation</p>	<p>1. Patient history</p> <p>2. Physical examination</p> <p>3. Vital signs</p> <p>4. SAMPLE history</p> <p>5. Reassessment</p> <p>6. Transport</p> <p>7. Documentation</p>



Assessment tool to identify gaps in the service



Medicine and equipment lists to ensure care can be provided

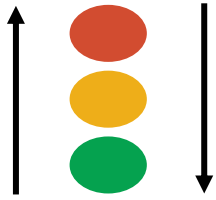
BASIC AMBULANCE EQUIPMENT AND CONSUMABLES CHECKLIST

CATEGORY	DESCRIPTION	ITEM	Identifying Information		Reason for absence		
			Present (1)	Present (2)	Absent	Broken	Out of stock
Ambulance	Gas exam	Classic stetho or watch with second hand					
	Gas exam	Stethoscope					
	Gas exam	SpO ₂ pulse oximeter (Blood pressure cuff (small) - large adult)					
	Gas exam	Paediatric stetho for blood pressure cuffs					
	Gas exam	Digital thermometer (32 - 43 Celsius)					
	Gas exam	Penlight					
	Gas exam	Spine depression					
	Gas exam	Spine flexion device					
	Gas exam	Glucosimeter					
	Gas exam	First aid kit					
A&E Consumables	Gas exam	Light weight based paediatric tape (for equipment using and drug storage)					
	POCT	Glucosimeter test strips					
	POCT	Diaper and tissues					
	Always	UV-A rays (100 - 31)					
	Always	Band-aids (10 - 100)					
	Always	Saline or other pH solution					
	Always	Stetho device - manual (adult or paediatric)					
	Always	Diaper device - manual (adult or paediatric)					
	Always	Diaper device - manual (adult or paediatric)					
	Always	Diaper device - manual (adult or paediatric)					



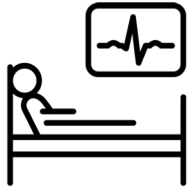
Basic Emergency Care (BEC) Course

Clinical training for frontline healthcare workers



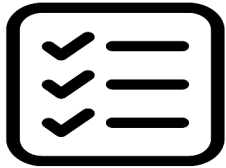
Interagency Integrated Triage Tool

Prioritize patients according to acuity level



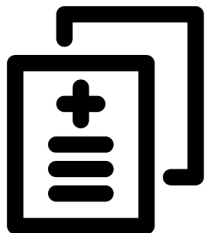
Resuscitation Area Designation

Optimize delivery of emergency care to the sickest patients



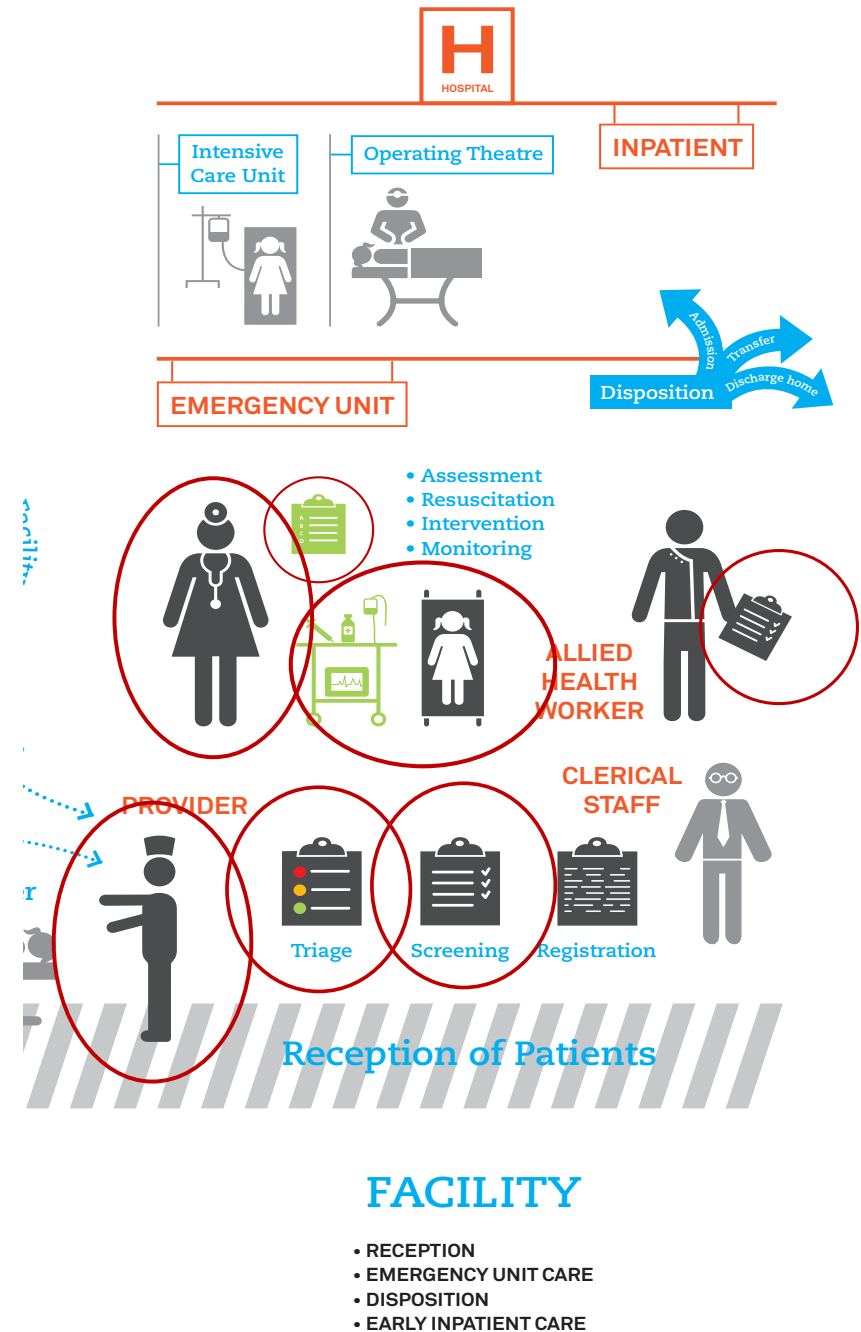
Emergency Care Checklists

Ensure consistent quality trauma and medical care



Standardized Clinical Forms

Improve emergency unit documentation and data collection





Introduction

ABCDE approach

Trauma

Difficulty in Breathing

Shock

Altered Mental Status



Final assessment



Credentials



Basic Emergency Care course Going live!


You suspect a patient may have taken opioids, but you need to check that they haven't overdosed. Which of the following presentations is most consistent with an opioid overdose?

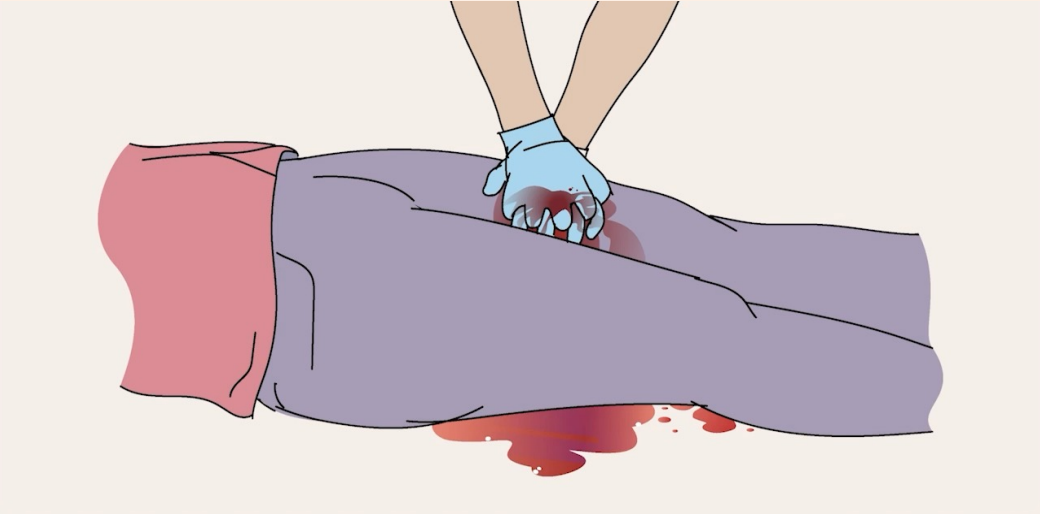
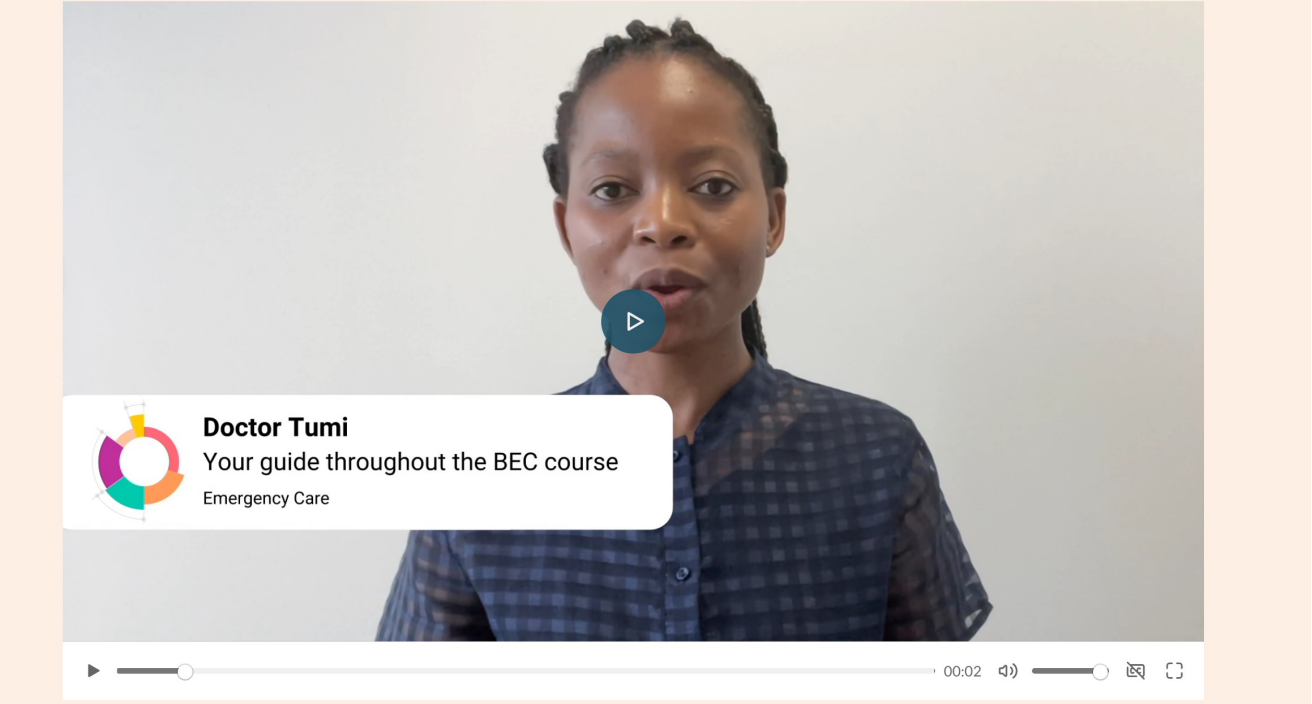
Select the correct answer and select Submit.

- Chest pain, hypoxia and an elevated respiratory rate
- Cough, fever and tachypnoea
- Decreased respiratory rate, hypoxia, small pinpoint pupils
- Hypoxia, abnormal movement of the chest wall

Submit

Key learning points

Breathing 	Signs of abnormal breathing or hypoxia	Give oxygen. Assist ventilation with BVM if breathing NOT adequate.
	Wheeze	Give salbutamol. For signs of anaphylaxis: give IM adrenaline.
	Signs of tension pneumothorax (absent sounds / hyperresonance on one side WITH hypotension, distended neck veins)	Perform needle decompression, give oxygen and IV fluids. Will need chest tube
	Signs of opiate overdose (AMS and slow breathing with small pupils)	Give naloxone.



WHO Academy digital learning platform

INTERAGENCY INTEGRATED TRIAGE TOOL: Age ≥ 12



1 CHECK FOR RED CRITERIA

- Unresponsive
- AIRWAY & BREATHING**
 - Stridor
 - Respiratory distress* or central cyanosis
- CIRCULATION**
 - Capillary refill >3 sec
 - Weak and fast pulse
 - Heavy bleeding
 - HR <50 or >150
- DISABILITY**
 - Active convulsions
 - Any two of:
 - Altered mental status - Hypothermia or fever
 - Stiff neck - Headache
 - Hypoglycaemia
- OTHER**
 - High-risk trauma*
 - Poisoning/ingestion or dangerous chemical exposure*
 - Threatened limb*
 - Snake bite
 - Acute chest or abdominal pain (>50 years old)
 - ECG with acute ischaemia (if done)
 - Violent or aggressive
- PREGNANT WITH ANY OF:**
 - Heavy bleeding
 - Severe abdominal pain
 - Seizures or altered mental status
 - Severe headache
 - Visual changes
 - SBP ≥160 or DBP ≥110
 - Active labour
 - Trauma

YES

MOVE TO HIGH ACUITY RESUSCITATION AREA IMMEDIATELY

2 CHECK FOR YELLOW CRITERIA

- AIRWAY & BREATHING**
 - Any swelling/mass of mouth, throat or neck
 - Wheezing (no red criteria)
- CIRCULATION**
 - Vomits everything or ongoing diarrhoea
 - Unable to feed or drink
 - Severe pallor (no red criteria)
 - Ongoing bleeding (no red criteria)
 - Recent fainting
- DISABILITY**
 - Altered mental status or agitation (no red criteria)
 - Acute general weakness
 - Acute focal neurologic complaint
 - Acute visual disturbance
 - Severe pain (no red criteria)
- OTHER**
 - New rash worsening over hours or peeling (no red criteria)
 - Visible acute limb deformity
 - Open fracture
 - Suspected dislocation
 - Other trauma/burns (no red criteria)
 - Sexual assault
 - Acute testicular/scrotal pain or priapism
 - Unable to pass urine
 - Exposure requiring time-sensitive prophylaxis (eg. animal bite, needlestick)
 - Pregnancy, referred for complications

YES

MOVE TO CLINICAL TREATMENT AREA



Patients with high-risk vital signs or clinical concern need up-triage or immediate review by supervising clinician

YES

3 CHECK FOR HIGH-RISK VITAL SIGNS

- HR <60 or >130
- RR <10 or >30
- Temp <36° or >39°
- SpO2 <92%
- AVPU other than A

NO

MOVE TO LOW ACUITY OR WAITING AREA



Contents lists available at ScienceDirect

The Lancet Regional Health - Western Pacific

journal homepage: www.elsevier.com/locate/lanwpc

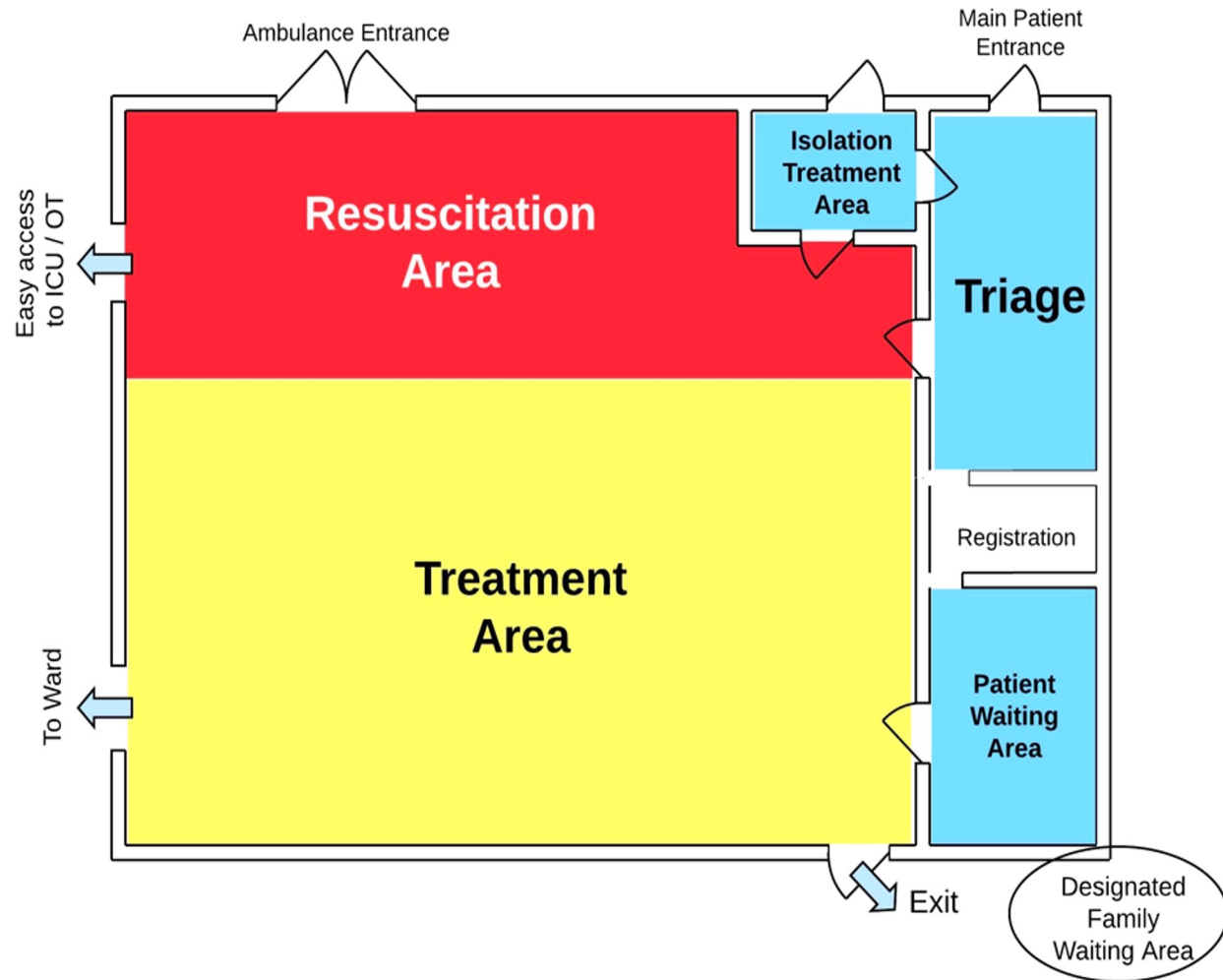


Research Paper

Validation of the Interagency Integrated Triage Tool in a resource-limited, urban emergency department in Papua New Guinea: a pilot study

Rob Mitchell^{a,*}, Ovia Bue^b, Gary Nou^b, Jude Taumomoa^c, Ware Vagoli^b, Steven Jack^b, Colin Banks^d, Gerard O'Reilly^{e,f}, Sarah Bornstein^f, Tracie Ham^g, Travis Cole^h, Teri Reynoldsⁱ, Sarah Körver^j, Peter Cameron^k





Staff



Spaces



Supply



Trauma Care Checklist

Immediately after primary & secondary surveys:

IS FURTHER AIRWAY INTERVENTION NEEDED? May be needed if: • GCS 8 or below • Hypoxaemia or hypercarbia • Face, neck, chest or any severe trauma	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NO
IS THERE A TENSION PNEUMO-HAEMOTHORAX?	<input type="checkbox"/> YES, CHEST DRAIN PLACED	<input type="checkbox"/> NO
IS THE PULSE OXIMETER PLACED AND FUNCTIONING?	<input type="checkbox"/> YES	<input type="checkbox"/> NOT AVAILABLE
LARGE-BORE IV PLACED AND FLUIDS STARTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NOT INDICATED <input type="checkbox"/> NOT AVAILABLE
FULL SURVEY FOR (AND CONTROL OF) EXTERNAL BLEEDING, INCLUDING:	<input type="checkbox"/> SCALP	<input type="checkbox"/> PERINEUM <input type="checkbox"/> BACK
ASSESSED FOR PELVIC FRACTURE BY:	<input type="checkbox"/> EXAM	<input type="checkbox"/> X-RAY <input type="checkbox"/> CT
ASSESSED FOR INTERNAL BLEEDING BY:	<input type="checkbox"/> EXAM <input type="checkbox"/> ULTRASOUND <input type="checkbox"/> CT	<input type="checkbox"/> DIAGNOSTIC PERITONEAL LAVAGE
IS SPINAL IMMOBILIZATION NEEDED?	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NOT INDICATED
NEUROVASCULAR STATUS OF ALL 4 LIMBS CHECKED?	<input type="checkbox"/> YES	
IS THE PATIENT HYPOTHERMIC?	<input type="checkbox"/> YES, WARMING	<input type="checkbox"/> NO
DOES THE PATIENT NEED (IF NO CONTRAINDICATION):	<input type="checkbox"/> URINARY CATHETER	<input type="checkbox"/> NASOGASTRIC TUBE
	<input type="checkbox"/> CHEST DRAIN	<input type="checkbox"/> NONE INDICATED

Before team leaves patient:

HAS THE PATIENT BEEN GIVEN:	<input type="checkbox"/> TETANUS VACCINE	<input type="checkbox"/> ANALGESICS
	<input type="checkbox"/> ANTIBIOTICS	<input type="checkbox"/> NONE INDICATED
HAVE ALL TESTS AND IMAGING BEEN REVIEWED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO, FOLLOW-UP PLAN IN PLACE
WHICH SERIAL EXAMINATIONS ARE NEEDED?	<input type="checkbox"/> NEUROLOGICAL	<input type="checkbox"/> ABDOMINAL
	<input type="checkbox"/> VASCULAR	<input type="checkbox"/> NONE
PLAN OF CARE DISCUSSED WITH:	<input type="checkbox"/> PATIENT/FAMILY	<input type="checkbox"/> RECEIVING UNIT
	<input type="checkbox"/> PRIMARY TEAM	<input type="checkbox"/> OTHER SPECIALISTS
RELEVANT TRAUMA CHART OR FORM COMPLETED?	<input type="checkbox"/> YES	<input type="checkbox"/> NOT AVAILABLE



Medical Emergency Checklist

Immediately after primary & secondary surveys:

IS FURTHER AIRWAY INTERVENTION NEEDED? May be needed if: • Abnormal level of consciousness (AVPU scale) • Stridor • Respiratory Distress • Hypoxaemia or hypercarbia	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NO
IS THERE A SEVERE ALLERGIC REACTION? (ADRENALINE NEEDED)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
IS THERE A TENSION PNEUMOTHORAX? (NEEDLE/DRAIN NEEDED)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
DOES THE PATIENT NEED OXYGEN?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
IS THE PULSE OXIMETER PLACED AND FUNCTIONING?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
DOES THE PATIENT NEED BRONCHODILATORS? (e.g. salbutamol)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
DOES THE PATIENT NEED IV FLUIDS?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ASSESSED FOR ONGOING BLEEDING (including gastrointestinal, vaginal, and other internal):	<input type="checkbox"/> BY EXAM <input type="checkbox"/> NGT <input type="checkbox"/> ULTRASOUND <input type="checkbox"/> CT	<input type="checkbox"/> DIAGNOSTIC PERITONEAL LAVAGE
IS TREATMENT FOR HYPOGLYCAEMIA NEEDED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
IS TREATMENT FOR OPIOID OVERDOSE NEEDED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
IS THE PATIENT HYPOTHERMIC/HYPERTHERMIC?	<input type="checkbox"/> YES	<input type="checkbox"/> NO

When initial resuscitation is complete:

HAVE VITAL SIGNS BEEN RECHECKED?	<input type="checkbox"/> YES
HAS THE PATIENT BEEN GIVEN:	<input type="checkbox"/> ASPIRIN <input type="checkbox"/> ANALGESIC <input type="checkbox"/> TRANSFUSION
	<input type="checkbox"/> ANTIBIOTICS <input type="checkbox"/> NONE INDICATED
DOES THE PATIENT NEED AN ECG?	<input type="checkbox"/> YES <input type="checkbox"/> NO
PREGNANCY TEST DONE?	<input type="checkbox"/> YES <input type="checkbox"/> NOT INDICATED
HAVE ALL TESTS AND IMAGING BEEN REVIEWED?	<input type="checkbox"/> YES <input type="checkbox"/> NO, PLAN IN PLACE
WHICH SERIAL EXAMS ARE NEEDED?	<input type="checkbox"/> NEUROLOGICAL <input type="checkbox"/> ABDOMINAL
	<input type="checkbox"/> VASCULAR <input type="checkbox"/> RESPIRATORY <input type="checkbox"/> NONE
PLAN OF CARE DISCUSSED WITH:	<input type="checkbox"/> PATIENT/FAMILY <input type="checkbox"/> RECEIVING UNIT
	<input type="checkbox"/> PRIMARY TEAM <input type="checkbox"/> OTHER SPECIALISTS
RELEVANT EMERGENCY UNIT CHART COMPLETED?	<input type="checkbox"/> YES

WHO PREHOSPITAL FORM

Mass Casualty

Form to be used with WHO Reference Card. See who.int/emergencycare for more information.

Run Number:		Date: DD/MM/YY	Call Received _____:_____
Patient Surname: First Name:		<input type="checkbox"/> Scene Call <input type="checkbox"/> Facility Transfer	Enroute to Scene _____:_____
Date of Birth: DD/MM/YY	Sex: M / F	Age: _____ INF / CH / AD	Phone: _____
Occupation:	Patient Address (at least City and Sub-district):		Scene Location: (sub-district)
			Arrived at Scene _____:_____
			Transporting _____:_____
			At Facility _____:_____
			In Service _____:_____

CHIEF COMPLAINT: _____ **Care in Progress on Arrival:** _____


INITIAL VS:
Time: _____:_____

Temp: _____ BP: _____/_____ HR: _____ RR: _____ SpO₂: _____ % on _____

Scene Type: Residence School
 Public Building Health Facility Street
 Other _____

Pain score (on a scale of 1-10, see Info Card for details): _____

PRIMARY SURVEY (refer to Reference Card for normal findings, only mark NML if all key elements are normal):

A irway <input type="checkbox"/> NML	<input type="checkbox"/> Angioedema <input type="checkbox"/> Stridor <input type="checkbox"/> Voice changes <input type="checkbox"/> Oral/Airway burns Obstructed by: <input type="checkbox"/> Tongue <input type="checkbox"/> Blood <input type="checkbox"/> Secretions <input type="checkbox"/> Vomit <input type="checkbox"/> Foreign body	Airway: <input type="checkbox"/> Repositioning <input type="checkbox"/> Suction <input type="checkbox"/> OPA <input type="checkbox"/> NPA <input type="checkbox"/> LMA <input type="checkbox"/> BVM <input type="checkbox"/> ETT C-spine stabilized: <input type="checkbox"/> None needed <input type="checkbox"/> Done (none needed = not altered, no pain or TTP, no distracting injury, no focal neuro deficit)
	B reathing <input type="checkbox"/> NML	Spontaneous Respiration: <input type="checkbox"/> Yes <input type="checkbox"/> No Chest Rise: <input type="checkbox"/> Shallow <input type="checkbox"/> Retractions <input type="checkbox"/> Paradoxical Trachea: <input type="checkbox"/> Midline <input type="checkbox"/> Deviated to <input type="checkbox"/> L <input type="checkbox"/> R Breath Sounds: Abnormal: <input type="checkbox"/> L _____ <input type="checkbox"/> R _____
C irculation <input type="checkbox"/> NML	Skin: <input type="checkbox"/> Warm <input type="checkbox"/> Dry <input type="checkbox"/> Pale <input type="checkbox"/> Cyanotic <input type="checkbox"/> Moist <input type="checkbox"/> Cool Capillary refill: <input type="checkbox"/> <3 sec <input type="checkbox"/> ≥3 sec Pulses: <input type="checkbox"/> Weak <input type="checkbox"/> Asymmetric _____ JVD: <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Bleeding controlled (bandage, tourniquet, direct pressure) Access: <input type="checkbox"/> IV: Loc _____ Size _____ <input type="checkbox"/> IO: Loc _____ Size _____ <input type="checkbox"/> IVF: _____ mLs <input type="checkbox"/> NS <input type="checkbox"/> LR <input type="checkbox"/> Other _____ <input type="checkbox"/> Pelvis stabilized
D isability <input type="checkbox"/> NML	Blood glucose: _____ <input type="checkbox"/> Glucose Responsiveness: <input type="checkbox"/> A <input type="checkbox"/> V <input type="checkbox"/> P <input type="checkbox"/> U <input type="checkbox"/> Naloxone GCS: _____ (E _____ V _____ M _____) Moves Extremities: <input type="checkbox"/> LUE <input type="checkbox"/> RUE <input type="checkbox"/> LLE <input type="checkbox"/> RLE Pupils: Size: L _____ R _____ Reactivity: L _____ R _____	E xposure <input type="checkbox"/> NML <input type="checkbox"/> Exposed completely ENTER ADDITIONAL EXAM FINDINGS ON REVERSE: 

S. A. M. P. L. E.	Allergies: <input type="checkbox"/> Unknown	Pregnant: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Medications: <input type="checkbox"/> Unknown	Past Medical: <input type="checkbox"/> HTN <input type="checkbox"/> DM <input type="checkbox"/> COPD <input type="checkbox"/> Psych <input type="checkbox"/> Renal Disease <input type="checkbox"/> Unknown Other: _____
	Review of Systems: _____	Past Surgeries (type & date): <input type="checkbox"/> Unknown

Review of Systems: _____ exacerbating and alleviating factors, prior episodes & prior interventions

PHYSICAL EXAM: (Refer to the Reference Card for normal findings. Do NOT mark NML unless all key elements are normal.)

<input type="checkbox"/> NML	General		<input type="checkbox"/> NML	Neuro/ Psychiatric	
<input type="checkbox"/> NML	HEENT		<input type="checkbox"/> NML	Neck	
<input type="checkbox"/> NML	Respiratory		<input type="checkbox"/> NML	Cardiac	
<input type="checkbox"/> NML	Abdominal		<input type="checkbox"/> NML	Pelvis/GU/ Rectal	
<input type="checkbox"/> NML	MSK		<input type="checkbox"/> NML	Skin	

ADDITIONAL INTERVENTIONS:

Fluids and Medications Given (include time) <input type="checkbox"/> Bronchodilators: _____ <input type="checkbox"/> IVF: _____ mLs <input type="checkbox"/> NS <input type="checkbox"/> LR <input type="checkbox"/> Other _____ <input type="checkbox"/> Analgesia: _____ <input type="checkbox"/> Other: _____	Procedures (include time and outcome) <input type="checkbox"/> Splinting / Reduction: _____ <input type="checkbox"/> Pelvic Stabilization: _____ <input type="checkbox"/> Wound Bandaging: _____ <input type="checkbox"/> Burn Dressing: _____ <input type="checkbox"/> Other: _____
---	--

ASSESSMENT (include brief summary and differential) **AND PLAN:**

REASSESSMENT at (24h time) _____:_____	Temp _____ HR _____ BP _____ / _____ RR _____ SpO ₂ : _____ % on _____ Pain: _____	<input type="checkbox"/> Condition same Changes: _____
REASSESSMENT at (24h time) _____:_____	Temp _____ HR _____ BP _____ / _____ RR _____ SpO ₂ : _____ % on _____ Pain: _____	<input type="checkbox"/> Condition same Changes: _____
REASSESSMENT at (24h time) _____:_____	Temp _____ HR _____ BP _____ / _____ RR _____ SpO ₂ : _____ % on _____ Pain: _____	<input type="checkbox"/> Condition same Changes: _____

Presumptive Diagnoses/Impressions (list all):

Form to be used with WHO Reference Card. See who.int/emergencycare for more information.



WHO Integrated data platform
Welcome on the WHO Integrated data platform! Please enter your credential to enter into the platform.



Sign in

Username

Password

Sign in

For any issue contact us in integrated-data@who.int or open a ticket in the Online Reporting System

Powered by DHIS 2 Powered by DHIS2, Managed by WHO

WHEN DATA SAVES LIVES

World Health Organization

WHO International Registry for Trauma and Emergency Care

www.who.int/emergencycare

WHO Data Set for Injury

Variable Name	Contextual Definition
Core = BOLD, Extended = ITALICS	
Facility ID	Unique facility identifier for registries that include multiple facilities
Registry Case ID	Unique case (patient) identifier for registry
<i>Date of Birth</i>	The exact or approximate date of birth of the patient
Age	The known or estimated age of the injured person at the time of injury
IF Unknown -> Age Category	The age group of the injured person at the time of injury: infant (IN) if appears up to 1 year of age, child (CH) for 1-18 years, or adult (AD)
Gender	The reported gender of the patient
Injury Geographic Location	Location where the injury event occurred, to at least the level of sub-district or sub-county
<i>Patient Residence</i>	Sub-district or sub-county where patient resides
<i>Patient Occupation</i>	Indicate patient's usual or principal work or business to earn a living - LIST
	Number of facilities the patient was seen at prior to arrival at the current facility for this event
	Level of the facility which the patient was transferred to current facility - LIST
	The date when the patient arrived at current facility
	The time when the patient arrived at current facility
<i>Mode of arrival</i>	Mode of arrival delivering the patient to the current facility - LIST
	Indication of whether patient arrived with signs of life
	The time of first vital sign assessment at the current facility
	First recorded heart rate in the current facility
	First recorded systolic blood pressure in the current facility
	First recorded unassisted respiratory rate in current facility
	First recorded oxygen saturation in the current facility
	Supplemental oxygen administration when measuring initial oxygen saturation
	First recorded total GCS following arrival at current facility
	First recorded eye component of GCS following arrival at current facility - LIST
	First recorded verbal component of GCS following arrival at current facility - LIST

Oxygen not administered for patient with tachypnea

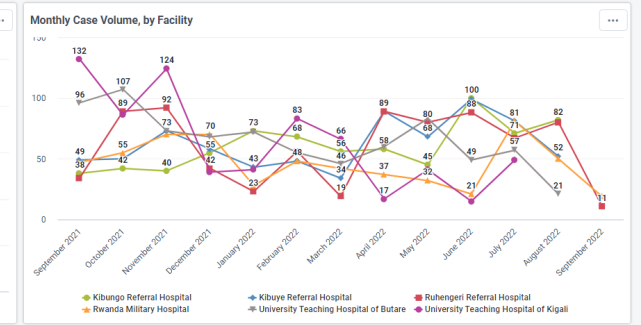
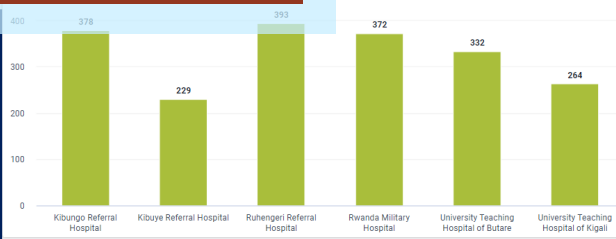
Audit definition:	Audit definition: Initial Spontaneous RR <12 OR >30 AND EU Proceed Supplemental Oxygen Administration
Organisation Unit:	Organization Unit: Hospital A
Report Quarter:	Report Quarter: 2021Q1
Record Count:	Number of cases found: 2
Generated on:	Generated on Wed Sep 07 2022 08:25:29 GMT+0200 (Central European Summer Time)

Register ID

3170FX4F-P

3170HJNJ-H

Form fields include: Hospital Registration Number, Patient Name, Date of arrival, Date of Birth, Age, Sex, Weight, Height, Referral Status, Injury Mechanism, Chief Complaint, Initial VS, Primary Survey, and Physical Examination (A-F).



Proportion of Cases Arriving to EU via Referral, by Facility

Monthly Deaths in Patients with Low Injury Severity Scores, by Facility

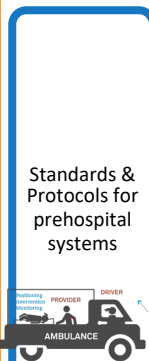
REGION	ECSA		ROADMAP		HEAT		BEC		REGISTRY	
	Overall	2022	Overall	2022	Overall	2022	Overall	2022	Overall	2022
AFRO	13	4	7	2	5	3	27	11	7	4
EMRO	10	3	4	2	7	4	7	3	1	
EURO	7	2	2		4	2	4	2		
PAHO	2	1	1				3	2		
SEARO	3	2	1		1	1	1		3	1
WPRO	7								2	2
Total	42	12	15	4	15	10	42	18	11	5

Ongoing activities in Emergency Care

National Roadmap:
Areas targeted for
priority actions

Available Tools
and Resources

Developing
Prehospital
systems



Standards &
Protocols for
prehospital
systems

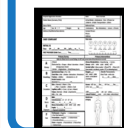
Strengthening
surge capacity

EMT Toolkit

Mass Casualty
Management
Course

Standards for
QI and data

WHO Clinical
Forms



WHO Registry
IRTEC

dhis2

Emergency
Care Training

WHO Basic
Emergency
Care Course



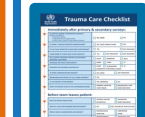
EU
Management
Course

Formal Triage
and Other
Protocols

Inter-agency
Integrated
Triage Tool



WHO clinical
checklists



Policies to
improve
access to
emergency
care



Country
sharing of
legislation

Trauma Care Checklist

Adapted for Mass Casualty Incidents

Immediately after primary and secondary surveys:

Full survey for (and control of) external bleeding including:	<input type="checkbox"/> LIMBS <input type="checkbox"/> SCALP	<input type="checkbox"/> PERINEUM <input type="checkbox"/> BACK
Is further airway intervention needed ? May be needed if: • GCS 8 or below • Hypoxaemia or hypercarbia • Face, neck, chest or any severe trauma	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NO
Is there a penetrating wound to the chest or high risk of tension pneumo-haemothorax ?	<input type="checkbox"/> YES, CHEST DRAIN PLACED	<input type="checkbox"/> NO
Is the pulse oximeter placed and functioning ?	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NOT AVAILABLE
Large bore IV placed and fluids started ?	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NOT INDICATED <input type="checkbox"/> NOT AVAILABLE
Clinical evidence of internal bleeding ?	<input type="checkbox"/> YES, RECORDED	<input type="checkbox"/> NO
Is pelvic immobilization needed ?	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NOT INDICATED
Limb fractures immobilized and neurovascular status of all 4 limbs checked ?	<input type="checkbox"/> YES, DONE	
Is spinal immobilization needed ?	<input type="checkbox"/> YES, DONE	<input type="checkbox"/> NOT INDICATED
Is the patient hypothermic ?	<input type="checkbox"/> YES, WARMING	<input type="checkbox"/> NO
Does the patient need (if no contraindication):	<input type="checkbox"/> URINARY CATHETER <input type="checkbox"/> CHEST DRAIN	<input type="checkbox"/> NG TUBE <input type="checkbox"/> NOT INDICATED

Before team leaves patient:

Does the patient need: (administer now if available or mark as needed on the referral form)	<input type="checkbox"/> TETANUS VACCINE <input type="checkbox"/> ANTIBIOTICS	<input type="checkbox"/> ANALGESICS <input type="checkbox"/> NONE INDICATED
Patient documentation completed ?	<input type="checkbox"/> YES, DONE	
Transfer documentation completed ?	<input type="checkbox"/> YES, DONE	

**MASS CASUALTY
MANAGEMENT
LEARNING
PROGRAMME**

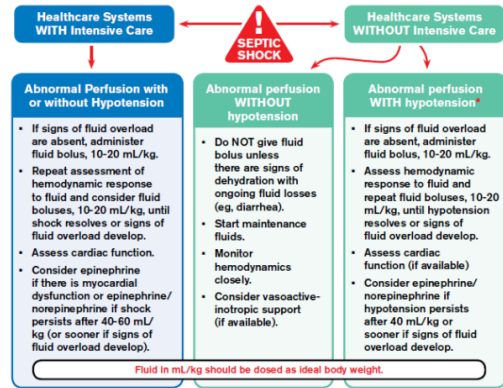
Guide | **MASS
CASUALTY
PREPAREDNESS
AND RESPONSE
IN EMERGENCY
UNITS**

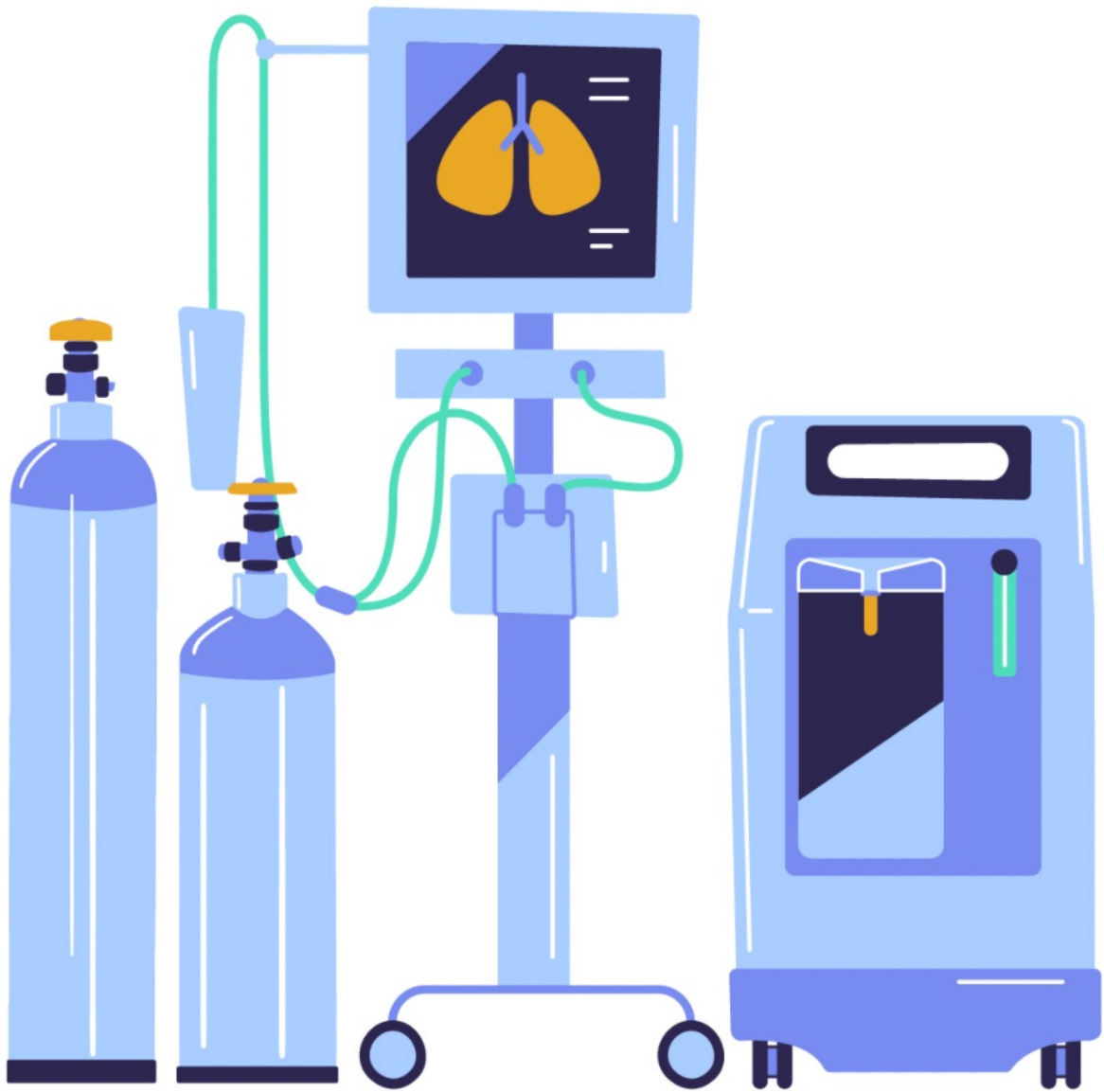
Version 20220501

- Essential Resources for Emergency and Critical Care

- Critical Care Course

• Sepsis learning program





Critical Care Course Contents

1. Introduction, principles, monitoring
2. Airway
3. Acute respiratory failure
4. Shock
5. Altered mental status
6. Nutrition and fluids
7. Setting up a critical care bed in your hospital

Country Case Study: Ethiopia

Dr Alegnta Gebreyesus Guntie

Attaché (health affairs)

Permanent Mission of the Federal Democratic Republic of Ethiopia,
Geneva

*Strengthening services through emergency and
critical care: Maternal and child health*

Dr Allisyn Moran

Unit Head, Maternal Health Unit

Questions & Answers

Dr Teri Reynolds

Unit Head, Clinical Services and Systems

Wrap up and end of session

Dr Lee Wallis

Lead Emergency Care, Clinical Services and Systems

Thank You

For more information please contact:
Lee Wallis: Lead Emergency Care
at emergencycare@who.int

who.int/emergencycare