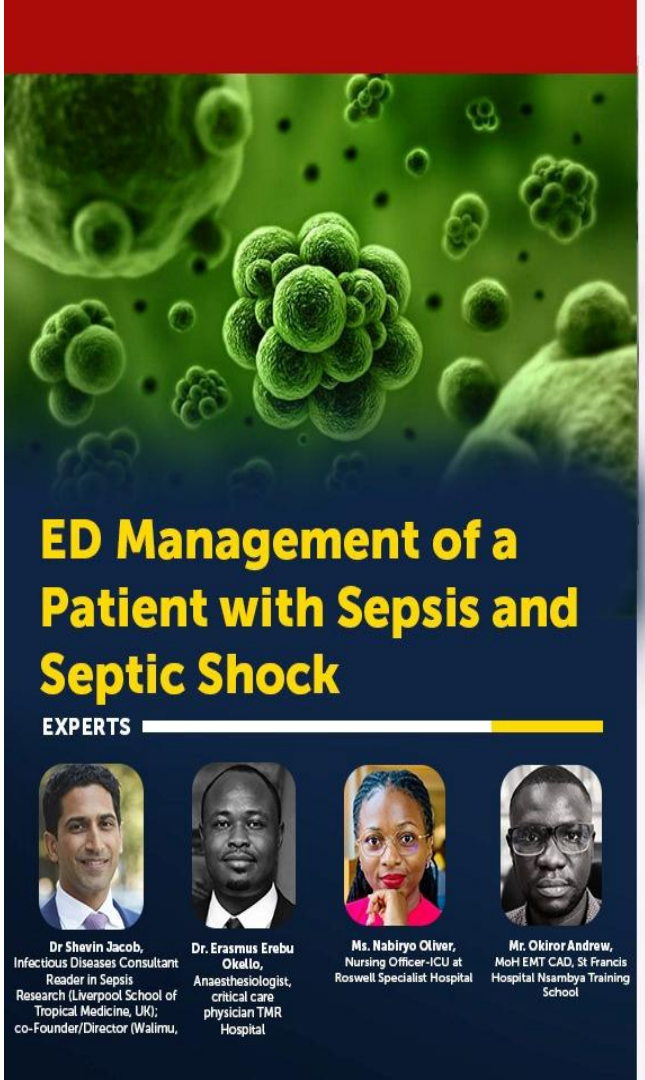
THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

Seed GLOBAL HEALTH

Project ECHO

EMS ECHO 104



THE REPUBLIC OF UGANDA
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This session will delve into areas such as;

1. Pre-hospital care for a patient with sepsis and septic shock
2. Epidemiology of Sepsis in Uganda
3. ED Clinical evaluation of a patient with Sepsis
4. ED Point-of-care diagnostics for sepsis
5. Risk stratification and prognosis in a patient with sepsis and septic shock
6. ED management of a patient with sepsis and Septic Shock
7. ED Disposition plan for a patient with sepsis and septic shock

scan to register

FRIDAY
Nov 7th 2025
2-4pm EAT

use link;
https://shorturl.at/SN1wQ

Case Presentor
Dr Simon Nambago,
Internal Medicine Resident at MakCHS

MODERATOR
Dr. Anna Meridah Kaguna,
EM Physician, MSc.Paediatric Emergency Mulago NRH

EMERGENCY CARE SOCIETY OF UGANDA

ED Management of a Patient with Sepsis and Septic Shock – the global context and management considerations along the continuum of care

EMS ECHO Session 104

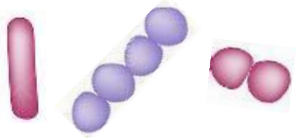
Kampala, Uganda| 07 November 2025

Shevin T Jacob, MD MPH

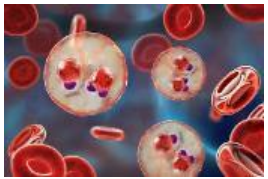
What is sepsis and who is at risk?

Life-threatening organ dysfunction due to a dysregulated host response to infection

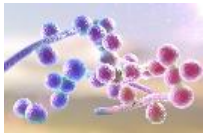
Bacteria



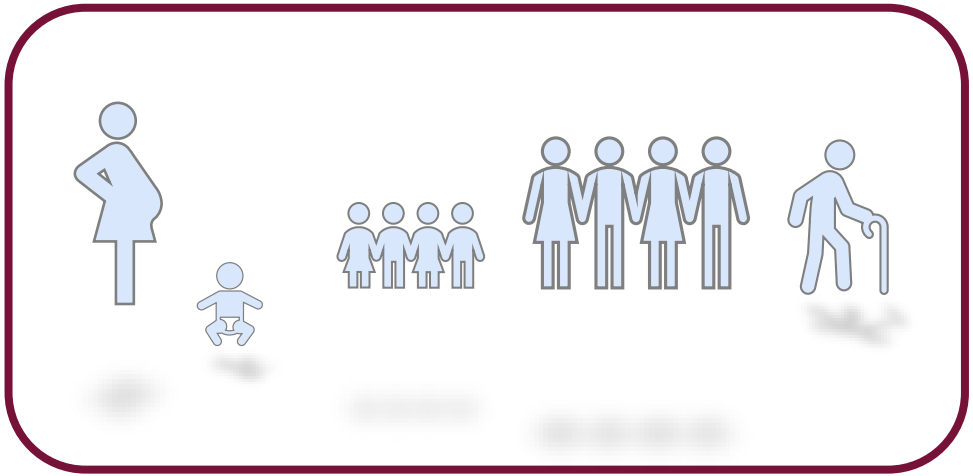
Parasites



Fungi



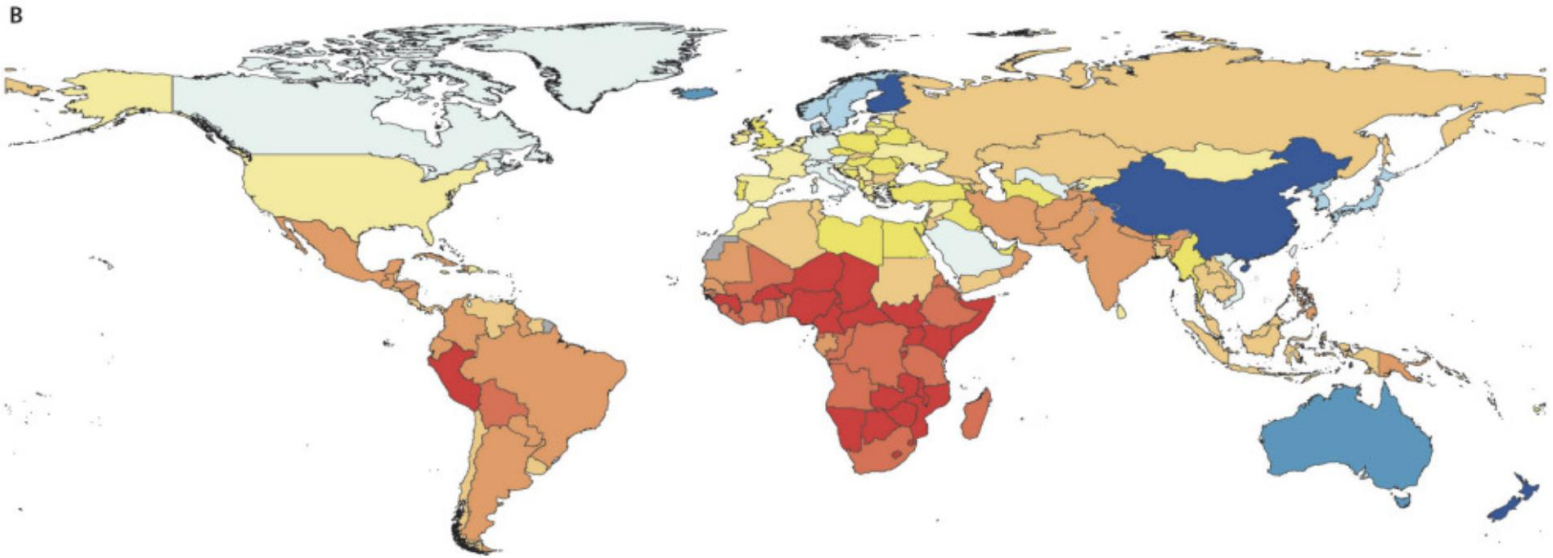
Viruses



Sepsis is important globally…and LMICs are disproportionately affected…particularly in sub-Saharan Africa

21.4m deaths globally

85% cases/ deaths occur in LMICs



GBD 2021 Global Sepsis Collaborators. *Lancet Glob Health*. 2025 Oct 21:S2214-109X(25)00356-0.
https://vizhub.healthdata.org/microbe

WHO resolution on sepsis

- **World Health Assembly (May 2017):** WHO makes sepsis a global health priority
- **Sepsis resolution** to improve prevention, diagnosis and management of sepsis
- **194 UN Member States** to implement measures to reduce human health and economic burden of sepsis

Most deaths from sepsis are…*"preventable through low-cost infection, prevention and control measures, early diagnosis and rapid treatment"*

Tedros Adhanom Ghebreyesus,
WHO Director-General
2025 World Sepsis Day Video Address

The "sepsis patient care continuum" – a framework for understanding knowledge gaps and research opportunities for improving sepsis management

1. Early recognition/ Triage
2. Diagnosis

Home/ Community → Health facility → Home / Community

3. Early appropriate treatment
4. Monitoring/ Ongoing Treatment
5. Recovery/ Rehabilitation

K Rudd, et al. *Crit Care* 2018; 22:232.

Brief History(Collateral)

37/M, with no known chronic illnesses, a self-referral from a peripheral clinic due to worsening clinical state. Presented with high-grade intermittent fevers x1/7 associated with DIB, easy fatiguability, GBW and joint pains. Over 3/7 of the onset of symptoms, he also developed an altered mental state that worsened over time and at the time of admission, he was brought in semiconscious. No hx of headache, chest pain, cough, lower limb swelling, seizures or trauma reported

Primary Survey (Emergency Assessment)

A	Noisy breathing, with copious oral secretions
B	Tachypnoiec at 46bpm, SPO2 = 79% on 5L/min by prongs, Symmetrical chest expansion, with bilateral diffuse crepitations and transmitted sounds

Primary Survey (Emergency Assessment)

C	Cold clammy peripheries, CRT = 4s, PR=127bpm, small volume, regular, BP=116/84mmHg
D	GCS=9/15 (E=2, V=2, M=5), PEARL, No FNDs, RBS =8mmol/L, No seizures observed
E	Febrile to touch, no obvious injuries, petechiae/ecchymoses. Had a urine bag in situ, draining dark urine, had 100ml

Poll Question 1

What are the imminent emergencies in this patient?

What are the emergency Conditions?

THREATS	*PRIORITY*	*Findings*	*Associated Risk*
A	Airway at risk	Noisy breathing, copious oral secretions	Aspiration
B	Hypoxia Severe respiratory distress	RR of 46bpm, labored breathing SPO2=79% on 5l/min	- Respiratory failure - Cardiac arrest
C	Inadequate tissue perfusion	Cold clammy peripheries, CRT = 4s, Pulse =127bpm, small volume, regular	Multiple organ failure
D	Altered LOC	Aspiration, airway at risk	Positioned patient in left lateral position, Inserted NG tube

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Poll Question 2

What are the emergency management priorities for this patient?

What are the emergency Conditions?

THREATS	*PRIORITY*	*Findings*	*Associated Risk*	*Immediate Action Taken*
A	Airway obstruction	Noisy breathing, copious oral secretions	Aspiration	Positioned patient in recumbent position, Suctioning done OPA inserted and prepared for intubation
B	Hypoxic cardiac arrest	RR of 46bpm, Sp02=79% on 5l/min	Cardiac arrest	Started NRM at 15L/min, then BVM mask ventilation initiated with oxygen therapy at 15l/m
C	Shock	Cold extremities, CRT >3s, PR=127bpm, small volume	Multiple organ failure	2 large bore cannulae inserted, IV Ringer's lactate started at 30ml/kg over 3hrs (1L bolus in first hour) then I.V Noradrenaline infusion initiated at 0.05mcg/kg/min
D	Reduced LOC	Low GCS (9/15)	Aspiration	Positioned patient in left lateral position, Inserted NG tube

Interventions to stabilize the patient

Great!

We have started to stabilize the patient
…let’s gather more details!

SAMPLE History

Signs & Symptoms	37y/m brought with 3/7 hx of fevers associated with GBW, joint pains, altered mentation that worsened over time and later developed DIB.
Allergies	No known food/drug allergies
Medications	Not on any chronic medication

SAMPLE History

Past Medical History	Treated in a peripheral clinic for a febrile illness on unknown medication
Last Oral Intake	24 hours before the presentation
Events Leading Up to Presentation	First had a febrile illness for a week, then developed impaired levels of consciousness 3 days before presentation. Had DIB and high-grade fevers on the day of presentation

Secondary Survey (Head-to-toe examination)

RELEVANT POSITIVES	RELEVANT NEGATIVES
G/E: Very sick-looking patient, in obvious respiratory distress, febrile CNS : GCS(9/15) R/S : RR at 20bpm, bilateral diffuse crackles CVS : Cold clammy peripheries, CRT = 4s, small vol. pulse at 127bpm.	Not pale, no jaundice, well nourished, no petechiae/ecchymoses, no wound seen. Soft neck, PEARL, negative Kernig's sign, no FNDs JVP not raised Normal heart sounds Abdomen of normal fullness, moving well with respiration, soft, no organomegaly

Differentials

1. Severe malaria(Cerebral malaria
2. Meningo-encephalitis
3. Septic shock
4. Pulmonary embolism
5. Aspiration pneumonia

POLL QUESTION 3

What are the essential Bedside investigations for this patient?

Investigations

Investigation	Result
BS for MPs	++mps/hpf
CBC	WBC= 4.78, Neu%= 93.6, Neu #=14.8, HGB=15g/dL, PLT=211, LYMP%=3.5
Point of care ultrasound	There was good cardiac contractility noted with IVC well distended. No free fluid around the pericardium noted. No right ventricular dilatation noted and left ventricle appeared normal.

Supportive Management

I. Suction airway PRN to clear/maintain airway patent
II. Oxygen therapy 5L/min by NP
III. IV paracetamol for pain management
IV. Iv fluids 30mls/Kg over 3hours while monitoring output
V. Position – prop up bed
VI. NGT insertion
VII. Urinary catheter insertion

Specific Management

1. **IV artesunate 2.4 mg/Kg (156 mg) at 0, 12 and 24 hours**
2. **IV PISA 4.5 g 8 hourly**
3. **IV Noradrenaline infusion at 0.05mcg/Kg**

Progression

The patient was in the emergency department for about 3 hours while awaiting ICU space. However, a cardiac arrest at about 2.5 hours after and CPR was done for 8min when ROSC was attained.
He was later transferred to the ICU for post-resuscitation care

POLL QUESTION 4

What are the components of post-cardiac arrest care?

Follow-up plan & Disposition

Transferred to ICU

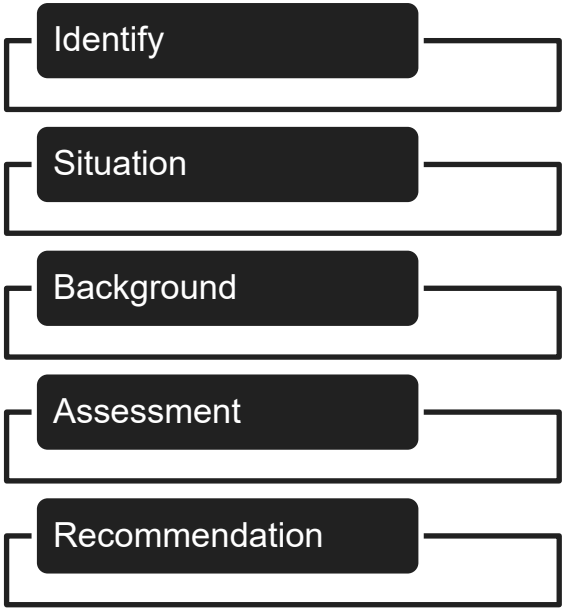
- Cardiac arrest upon reaching the ICU
- CPR done, but futile

Prehospital team:

What do you need to prepare for pre-hospital care for this patient?

- Staff
- Patient
- Equipment / Medications
- Mode of transport
- Documentation/Handover

Mr. Okiror Andrew, EMT at Naguru
MoH Call and Dispatch Centre



Introduction

EMS Role: Emergency Medical Services providers play a vital role in emergency medical care, ensuring that patients receive appropriate care & monitoring on scene, during transport and safely handed over for continuity of care
EMS

CAD forms the critical first link in the emergency response system, responsible for quickly gathering information, prioritizing calls (GREEN, YELLOW, **RED**, BLACK), providing immediate medical guidance, and coordinating the appropriate emergency personnel

Staff on Ambulance

STAFF	ROLES
	**Preparation:** Equipment and Vehicle Maintenance: Emergency Response: Scene Safety: **Patient Transport**: Emotional Support; Patient Assessment: **Life-Saving Interventions**; **Communication** and **Documentation**:
	**SUPPORT** …. Emotional Support ,Patient Advocacy: Information Source and Bridge: Active Participation in Care and Decisions: Facilitating Communication: Care Coordination and Adherence:

Equipment / Medications

Key Medications

Mode of Transport

Nursing team:

Is there anything else you would like to know now?

What are the **nursing priorities**
for this patient during their inpatient stay?

By: Ms. Nabiryo Oliver, Nursing Officer-ICU at Roswell Specialist Hospital

Introduction

- Management of sepsis requires a multidisciplinary approach involving doctors, nurses, laboratory staff, and other healthcare professionals.
- In the ED, nurses play a key role in early recognition, timely intervention, and ongoing monitoring.
- Early identification and prompt management are vital to improving patient outcomes.

Assessment	Nursing Diagnosis	Goal/Desired Outcome	Intervention	Rationale	Evaluation
Subjective data DIB, chest tightness **Objective data** SPO2-79% Accessory muscle use, crepitations on auscultation RR-46, corpious secretions	Impaired gas exchange related to inflamed alveolar membranes sec to sepsis as evidenced by tachypnea, dyspnea, SPO2-79%, and bilateral crepitations	Maintain adequate gaseous exchange with resultant ↑SPO2>92 % and RR between 12-20 breaths/min	Position pt in sit-up position(60 to 90^{o}	Enhances lung expansion and decreases work of breathing & facilitate coughing	By the end of 15 minutes pt's SP02 had increased to 85%, still in distress with a RR of 36
			Draw a sample for ABG, CBC, RFT, LFT	Ascertain adequacy of ventilation, oxygenation, (acid base status & lactate levels)	
			Provide supplemental oxygen via NRM	Increases O2 availability to tissues and improves gaseous exchange.	
			Suction airway Insert OPA/NPA	Maintain airway patency & prevent aspiration	

Assessment	Nursing Diagnosis	Goal/Desired Outcome	Intervention	Rationale	Evaluation
Subjective data Pt reports of feeling dizzy, confused **Objective data** Tachycardia > 100, Cold, extremities, pale or mottled skin, CRT=4s, reduced LOC, reduced U.O, MAP<65	Ineffective tissue perfusion related decreased C.O secondary to vasodilation, capillary leak evidenced by cold extremities, CRT=4s, reduced LOC, and reduced U.O	Patient will achieve an improved tissue perfusion in one hour	Assess patient vital signs including mental status, urine output &RBS	Provides baseline data for evaluation of goal and also help in assessing tissue perfusion	Patient demonstrated improved tissue perfusion as evidenced by a CRT<2, improved GCS,↑ urinary output, improved MAP
			Establish 2 large-bore IV lines, blood sample and give IVF at 30ml/Kg as bolus, 1L first 1 hour	Fluids restore intravascular volume, improve CO, ↑tissue perfusion, Blood samples for C & S, and other investigations	
			Vasopressors (e.g. NE 0.05 mcg/Kg/min)	↑TPR with ↑BP and ↑ tissue perfusion	
			Insert a urinary catheter	Monitor urine output (normal 0.5 to 1ml/kg/hr)	

Assessment	Nursing Diagnosis	Goal/Desired Outcome	Intervention	Rationale	Evaluation
Subjective data Pt c/o feeling extremely hot **Objective data** Temperature reading >38°C, flushed skin, febrile to touch	Hyperthermia related to the infectious disease process evidenced by body temperature of >38°C, flushed skin febrile to touch	Maintain body temperature between 36.5 – 37.4°C within 1 hour	Expose and tepid sponge Administer IV pcm 1g as prescribed	Inhibits the COX-3-reduced prostaglandins-↓temp, encourage heat loss	In 1 hr patient's body temperature had reduced from>38°C to 37.2
			Empirical broad-spectrum Antibiotics	Reduce the microbial load by killing most of the infectious agents	
			Administer IV Artesunate as prescribed (2.4mg/kg)	Artesunate generates free radicals that destroy the malaria parasites hence reduced parasitemia	
			Assess for the infection focus and remove any indwelling tubes	Narrow focus and hence improved management	

References

- Herdman, T. H., Kamitsuru, S., & Takáo Lopes, C. (Eds.). (2024). NANDA International nursing diagnoses: Definitions and classification, 2024-2026 (13th ed.). Thieme

Now, let's dive into the ED & Acute Care Management of this Patient's condition

Dr Erasmus Erebu Okello, Anaesthesiologist, critical care physician, TMR Hospital

Dr Shevin Jacob, Infectious Diseases Consultant Physician; Reader in Sepsis Research (LSTM, UK); co-Founder/Director (Walimu, Uganda)

How should you approach this patient as an ED doctor?

The "sepsis patient care continuum" – a framework for understanding knowledge gaps and research opportunities for improving sepsis management

1. Early recognition/ Triage
2. Diagnosis

Home/ Community → Health facility → Home / Community

3. Early appropriate treatment
4. Monitoring/ Ongoing Treatment
5. Recovery/ Rehabilitation

K Rudd, et al. *Crit Care* 2018; 22:232.

Early recognition – ABCDE Approach (WHO Basic Emergency Care)

Airway with cervical spine immobilization

Breathing plus oxygen if needed

Circulation IV fluids and bleeding control

Disability AVPU/GCS, pupils and glucose

World Health Organization

Early recognition – the "Sepsis-3" definition

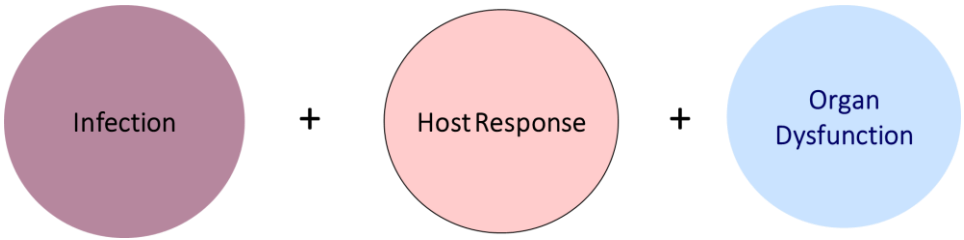
Research

Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

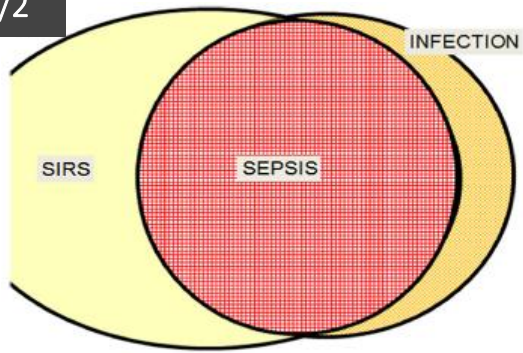
Developing a New Definition and Assessing New Clinical Criteria for Septic Shock

For the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

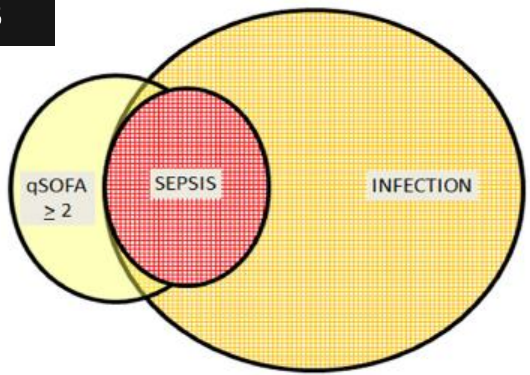
Life-threatening organ dysfunction due to a dysregulated host response to infection



SEPSIS-1/2



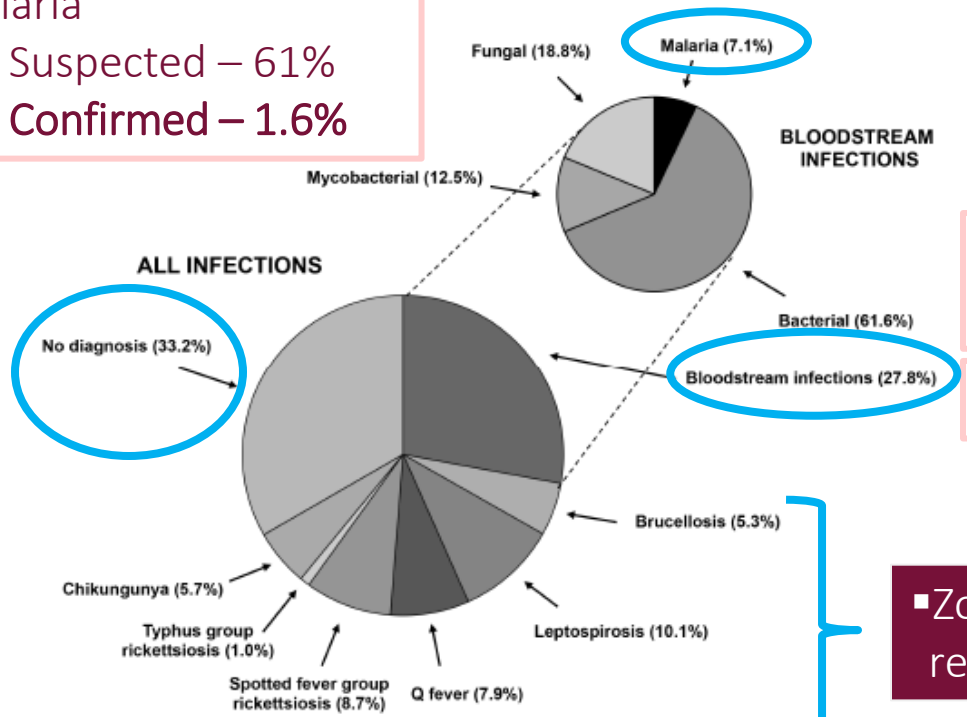
SEPSIS-3



M Shankar-Hari, *et al*. *JAMA*. 2016;315(8):775-787.
Vincent JL, *et al*. *Critical Care* 2016; 20:210.

Early diagnosis – consider your context and a broad differential

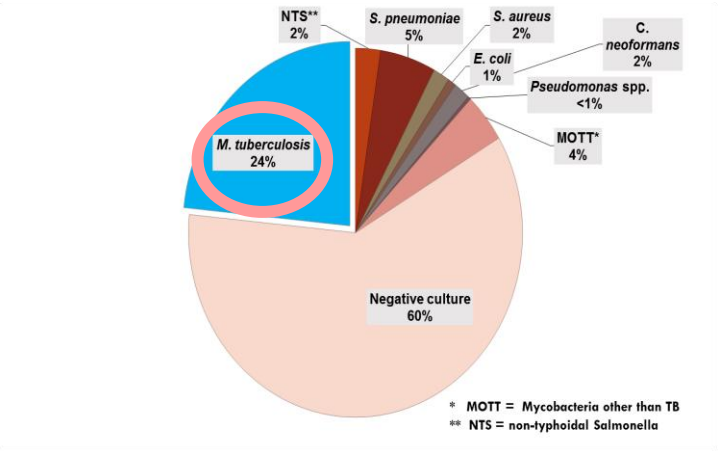
Malaria
- Suspected – 61%
- **Confirmed – 1.6%**



- Hospitalized febrile adult patients from TZ (n=403)
- Bloodstream infection in 28%
- No diagnosis in 33%
- Zoonotic diseases responsible for ~40%

JA Crump, *et al*. *PLoS NTD* 2013, 7(7): e2324.

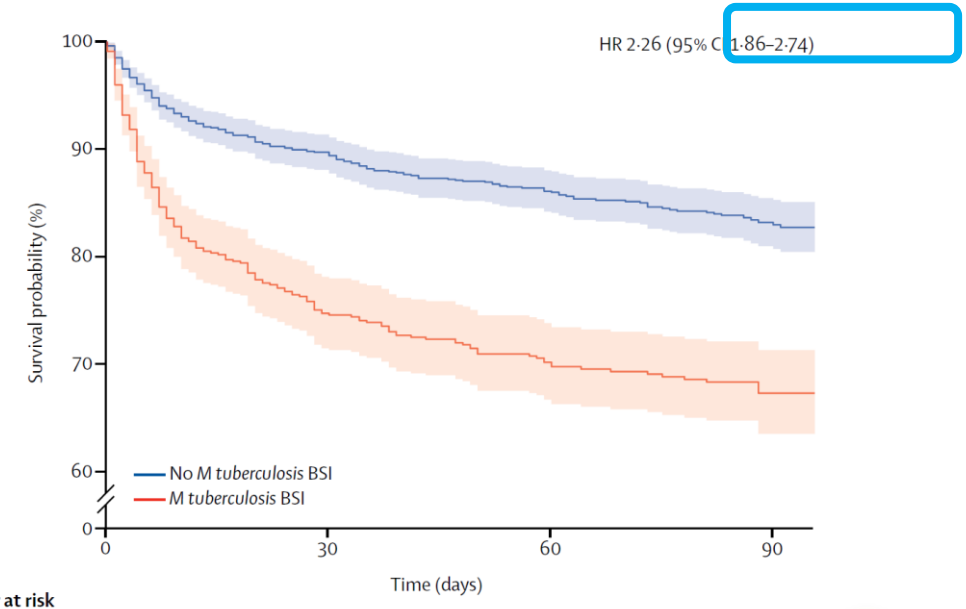
Early diagnosis –*Mycobacterium tuberculosis* is an important cause of sepsis and mortality among people living with HIV



THE LANCET
Infectious Diseases

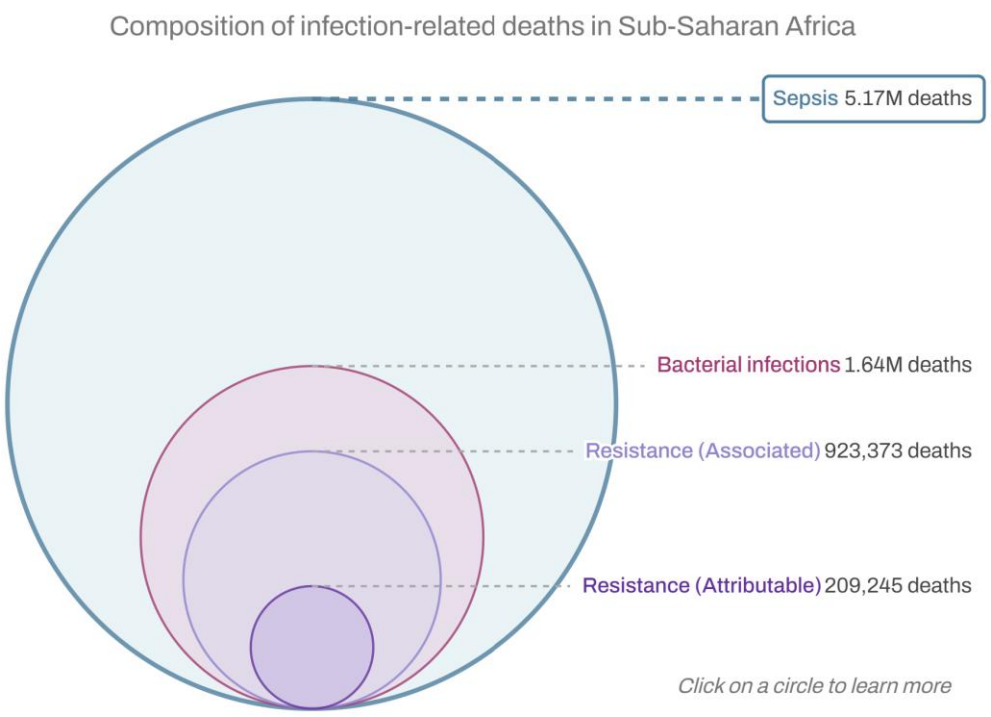
Mycobacterium tuberculosis bloodstream infection prevalence, diagnosis, and mortality risk in seriously ill adults with HIV: a systematic review and meta-analysis of individual patient data

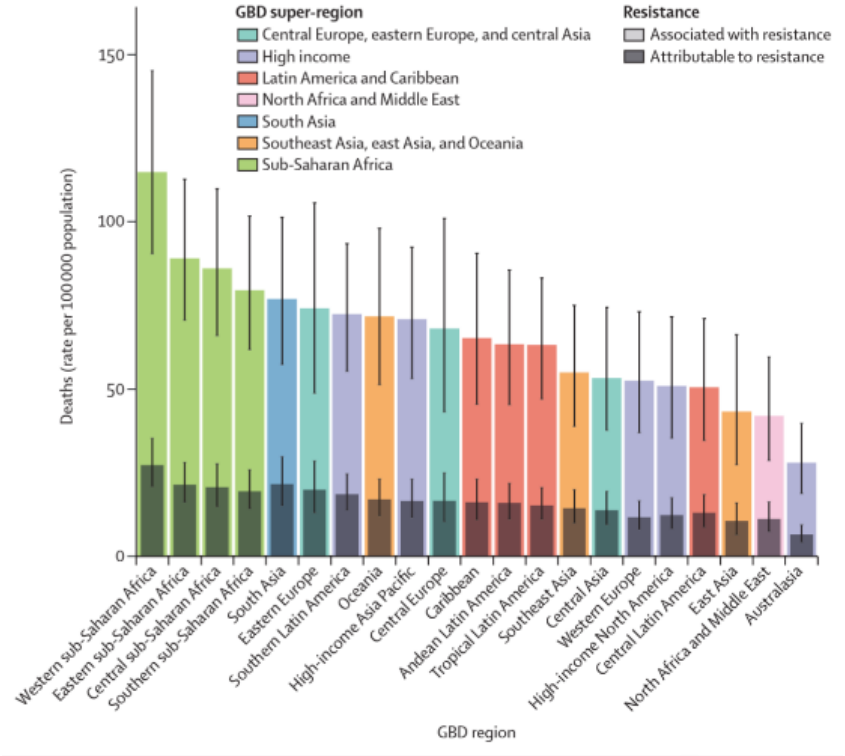
David A Barr, PhD [a,c,f,†] · Joseph M Lewis, MRCP [f,g,†] · Prof Nicholas Feasey, PhD [f,g] · Charlotte Schutz, MBChB [b,c,e] · Andrew D Kerkhoff, MD [h] · Shevin T Jacob, MD [f] et al. Show more



ST Jacob, *et al*. *PLoS One* 2013; 8(8): e70305
DA Barr, *et al*. Lancet Infect Dis 2020;20(6):742-752.

Early diagnosis – recognize the importance of antimicrobial resistance (AMR)





Lancet 2022; 399: 629–55
https://vizhub.healthdata.org/microbe/

“The face behind every AMR-related death is a face of a child, a woman or a man suffering and dying from sepsis…”

Dr Mariam Jashi,
Global Sepsis Alliance CEO
2024 UN Multi-stakeholder Hearing on Antimicrobial Resistance

Early appropriate treatment – the Surviving Sepsis Campaign (SSC), international guidelines for management of sepsis and septic shock

- SSC guidelines → evidence-based guidelines covering multiple domains of sepsis management including:
  - screening and early treatment
  - infection
  - haemodynamic management
  - ventilation
  - additional therapies
  - goals and long-term outcomes
- 2016 guidelines includes Sepsis-3 definition
- 2018 update advocates for "Hour-1" bundle:
  - Measure lactate level. Remeasure if initial lactate > 2mmol/L.
  - Obtain blood cultures prior abx administration.
  - Administer broad-spectrum antibiotics.
  - Begin rapid administration of 30ml/kg crystalloid for hypotension or lactate ≥ 4mmol/L.
  - Apply vasopressors to maintain MAP ≥ 65mmHg if hypotension during or after fluid resuscitation.

Surviving Sepsis Campaign

Society of Critical Care Medicine
The Intensive Care Professionals

ESICM
European Society of Intensive Care Medicine

Latest update to be released in 2026

Rhodes A, *et al*. *Crit Care Med* 2017; 45(3):1-67.
Levy MM. et al. Crit Care Med 2018; 46(6): 997-1000.

LSTM
Liverpool School of Tropical Medicine

How feasible is implementing the SSC guidelines in Africa?

- Survey assessing feasibility of SSC guidelines conducted in 185 hospitals from 24 African countries
  - Disparity in the number of African hospitals equipped to implement SSC guidelines compared to hospitals in HICs (1.4% vs. 81.0%)
- Challenges:
  - Limited recourse to mechanical ventilation/ ICU-level care (*may affect fluid volumes or time on pressors*)
  - Challenges in provided continuous monitoring (*static vs dynamic*)
  - Different pathogens may result in different pathophysiology (e.g., *M tuberculosis* blood stream infection)

Source: WHO Global Influenza Programme

Baelani, *et al*. *Critical Care* 2011; 15:R10.

Early appropriate treatment

GUIDELINES

Surviving sepsis campaign: international guidelines for management of sepsis and septic shock 2021

Check for updates

Fluids

Initial resuscitation:

5. For patients with sepsis induced hypoperfusion or septic shock we **suggest** that at least 30 mL/kg of intravenous (IV) crystalloid fluid should be given within the first 3 h of resuscitation

Weak recommendation, low-quality evidence

Fluid balance:

45. There is **insufficient evidence to make a recommendation** on the use of restrictive versus liberal fluid strategies in the first 24 h of resuscitation in patients with sepsis and septic shock who still have signs of hypoperfusion and volume depletion after initial resuscitation

Remarks

Fluid resuscitation should be given only if patients present with signs of hypoperfusion

Antibiotic Timing

	Shock is present	Shock is absent
Sepsis is definite or probable	Administer antimicrobials **immediately**, ideally within 1 hour of recognition	
Sepsis is possible	Administer antimicrobials **immediately**, ideally within 1 hour of recognition	Rapid assessment* of infectious vs noninfectious causes of acute illness Administer antimicrobials **within 3 hours** if concern for infection persists

*Rapid assessment includes history and clinical examination, tests for both infectious and non-infectious causes of acute illness and immediate treatment for acute conditions that can mimic sepsis. Whenever possible this should be completed within 3 hours of presentation so that a decision can be made as to the likelihood of an infectious cause of the patient's presentation and timely antimicrobial therapy provided if the likelihood is thought to be high.

More sepsis research needed to contextualize guidelines for management of sepsis patients in sub-Saharan Africa

Evans L, et al. *Intensive Care Med*. 2021; https://doi.org/10.1007/s00134-021-06506-y

Early and ongoing monitoring – early warning scores to identify rapidly decompensating patients

Chart 1: The NEWS scoring system

Physiological parameter	Score 3	2	1	0	1	2	3
Respiration rate (per minute)	≤8		9–11	12–20		21–24	≥25
SpO_2 Scale 1 (%)	≤91	92–93	94–95	≥96			
SpO_2 Scale 2 (%)	≤83	84–85	86–87	88–92 ≥93 on air	93–94 on oxygen	95–96 on oxygen	≥97 on oxygen
Air or oxygen?		Oxygen		Air			
Systolic blood pressure (mmHg)	≤90	91–100	101–110	111–219			≥220
Pulse (per minute)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	

Chart 2: NEWS thresholds and triggers

NEW score	Clinical risk	Response
Aggregate score 0–4	Low	Ward-based response
Red score Score of 3 in any individual parameter	Low–medium	Urgent ward-based response*
Aggregate score 5–6	Medium	Key threshold for urgent response*
Aggregate score 7 or more	High	Urgent or emergency response**

* Response by a clinician or team with competence in the assessment and treatment of acutely ill patients and in recognising when the escalation of care to a critical care team is appropriate.
**The response team must also include staff with critical care skills, including airway management.

SSC 2021 :

Recommendation

2. We **recommend against** using qSOFA compared to SIRS, NEWS, or MEWS as a single screening tool for sepsis or septic shock

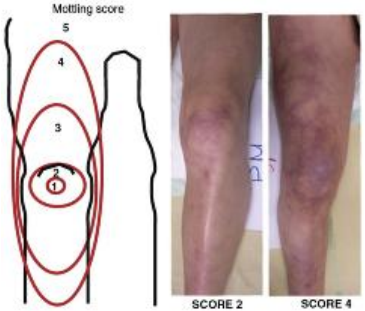
Strong recommendation, moderate-quality evidence

Early and ongoing monitoring – Potential solutions for assessment and monitoring of sepsis patients in resource-constrained settings

Haemodynamic assessment and support in sepsis and septic shock in resource-limited settings

David Misango[a], Rajyabardhan Pattnaik[b], Tim Baker[c,d], Martin W. Dünser[e], Arjen M. Dondorp[f,g,h] and Marcus J. Schultz[f,h,*], for the Global Intensive Care Working Group[†], of the European Society of Intensive Care Medicine (ESICM) and the Mahidol Oxford Tropical Medicine Research Unit (MORU) in Bangkok, Thailand

1. Bedside tools for assessing tissue perfusion [expert opinion] → capillary refill testing/ skin mottling scores/ skin temperature gradients



Score		Description
0	No	No mottling
1	Modest	Coin size, localized to the centre of the knee
2	Moderate	Mottling does not exceed the superior edge of the kneecap
3	Mild	Mottling does not exceed the middle thigh
4	Severe	Mottling does not exceed beyond the fold of the groin
5	Grave	Mottling exceeds beyond the fold of the groin

D Misango, *et al*. *Trans R Soc Trop Med Hyg* 2017; 111: 483–489.

Early and ongoing monitoring – Potential solutions for assessment and monitoring of sepsis patients in resource-constrained settings

Haemodynamic assessment and support in sepsis and septic shock in resource-limited settings

David Misango[a], Rajyabardhan Pattnaik[b], Tim Baker[c,d], Martin W. Dünser[e], Arjen M. Dondorp[f,g,h] and Marcus J. Schultz[f,h,*], for the Global Intensive Care Working Group[†], of the European Society of Intensive Care Medicine (ESICM) and the Mahidol Oxford Tropical Medicine Research Unit (MORU) in Bangkok, Thailand

1. Bedside tools for assessing tissue perfusion [**expert opinion**] → capillary refill testing/ skin mottling scores/ skin temperature gradients

2. Passive leg raise (PLR) to assess fluid responsiveness [2A: weak recommendation; high quality evidence]

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6. For adults with sepsis or septic shock, we **suggest** using dynamic measures to guide fluid resuscitation, over physical examination or static parameters alone

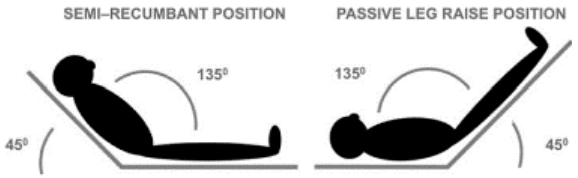
Weak recommendation, very low-quality evidence

Remarks

Dynamic parameters include response to a passive leg raise or a fluid bolus, using stroke volume (SV), stroke volume variation (SVV), pulse pressure variation (PPV), or echocardiography, where available

PLR methods:

i. Measure BP
ii. PLR for 60-90s
iii. Repeat BP
iv. ΔPP > 15% = fluid responsive



D Misango, *et al*. *Trans R Soc Trop Med Hyg* 2017; 111: 483–489.

My clinical approach to a severely unwell patient with suspected sepsis

1. Establish a differential diagnosis (DDx) → Use the CAUSE framework
   - LoCalization: Focal (from clinical exam) vs non-focal (approach in a systems-based fashion)
   - Acuity: <7d vs >=7d
   - Underlying risk factors: comorbidities including HIV and other immune suppression (e.g., steroid treatment); community acquired vs nosocomial; age
   - Severity: severe (requires hospitalization) vs non-severe
   - Exposure: travel/geography; medicines (including traditional); behavior (substance use; sexual history)
2. Prioritize → refinement of DDx to help focus approach and resources
3. Diagnostic tests → how and when to link diagnostic tests with initial exam; assess for occult infection during exam/imaging
4. Treatment → empiric vs directed
5. Monitoring and response
6. Post-discharge considerations

Additional take-home points

- Use a systematic approach to recognise, triage, manage and monitor all sepsis patients
- Identify severely unwell patients early
- Know the microbiologic milieu of your setting to tailor antimicrobial treatment
- "*Fluids should be administered with the same caution that is used with any intravenous drug*" → slow and steady fluid administration with frequent monitoring
- Monitor frequently for early warning signs of deterioration
- Remember IPC (including appropriate PPE) for your setting

JA Myburgh, et al. N Engl J Med 2013;369:1243-51.

Thank you