The Emergency Medicine Practice Toolkit

Three decisions for the ED, ambulance and remote clinic. Work through one case on your own or run a 30-minute team session.

Choose a case

Tap a row to begin

Emergency department pp. 2–4

Read a 12-lead and choose reperfusion.

Ambulance pp. 5–6

Choose a destination and give a pre-alert.

Remote clinic pp. 7–8

Treat two urgent problems and arrange transfer.

Using these adult training cases

Write the next action within your role. Type in a form-enabled reader or print and write, using fictional details. Compare with the debrief. Follow local protocols in practice.

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Chest pain, 70 minutes in

07:42 • Emergency department without a catheter laboratory

A 58-year-old man describes heavy central chest pain radiating to his jaw. He looks uncomfortable and has vomited. He is alert and speaking in full sentences.

Pulse 62/min **BP 106/68 mmHg** **RR 20/min**

SpO_2 96% on air. Neck veins prominent. Lungs clear.

What the team knows

No shock or heart failure is apparent. A 12-lead ECG is ready at 07:46. The network estimates **160 minutes from that ECG to wire crossing** at the PCI centre. The patient first met a clinician four minutes before the ECG.

Resources

A monitored resuscitation bay, fibrinolysis protocol and transfer team are available. A trained clinician completes the contraindication checklist and finds no contraindication to fibrinolysis.

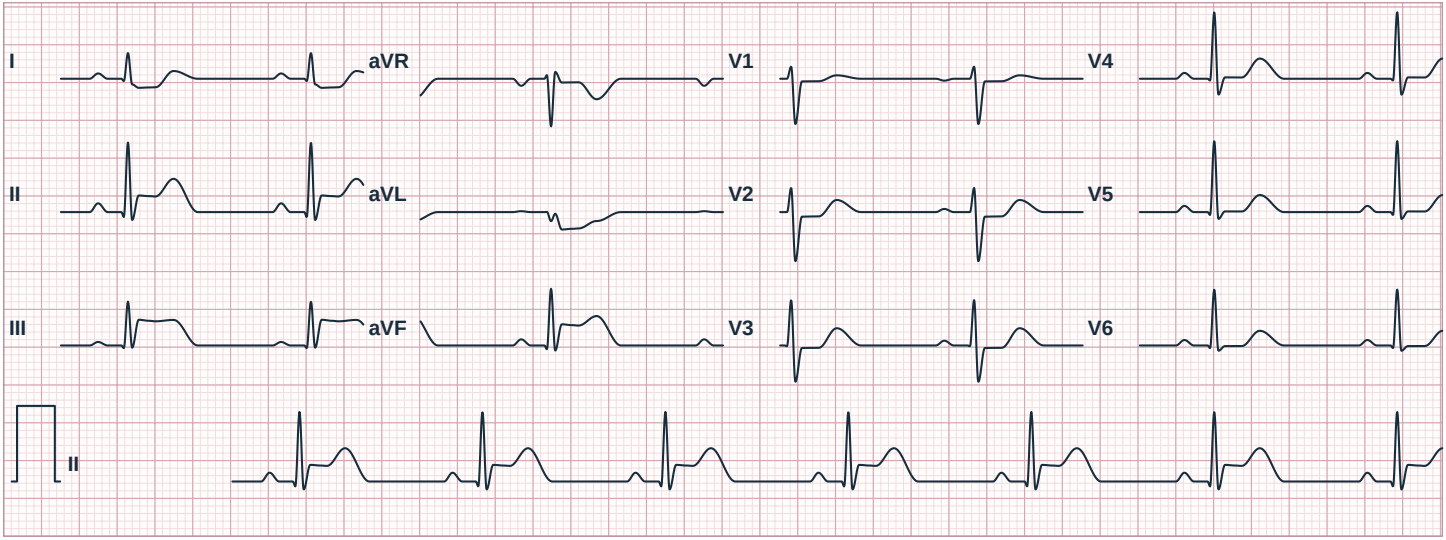
Your decision

Review the ECG on page 3. Choose primary PCI transfer alone, local fibrinolysis followed by transfer, or waiting for troponin. Explain which clock and which lead findings support your choice.

Open the 12-lead ECG

Read the tracing

Simulated 12-lead ECG • 07:46 • Rotate your phone or zoom to inspect the leads.



Simulated tracing | 25 mm/s | 10 mm/mV | print at actual size

1.6 s per column | 6.4 s rhythm strip

Name the territory, your reperfusion plan and the decisive time estimate.

Inferior ST elevation

Combine the lead pattern, symptoms and time to reperfusion.

What the tracing shows

Sinus rhythm ~62/min. ST elevation in II, III and aVF is greatest in III. Reciprocal depression in I and aVL supports inferior STEMI. Anterior ST depression may reflect posterior involvement.

Make the reperfusion call

Symptoms began 70 minutes ago. Diagnosis to wire crossing is 160 minutes. With onset within 12 hours, delay over 120 minutes and a clear eligibility screen, give **fibrinolysis promptly and transfer immediately** to a PCI centre. Use protocol antiplatelet and anticoagulant therapy.

What changes the plan?

If fibrinolysis is contraindicated, arrange urgent PCI transfer. Raised neck veins and clear lungs suggest RV involvement. Withhold nitrates and obtain V4R while the team activates reperfusion.

After the lytic

Reassess at 60–90 minutes. Ongoing ischaemia, instability or less than 50% ST resolution calls for urgent rescue PCI. If reperfusion succeeds, plan angiography within 2–24 hours.

Clinical sources ESC 2023 ACS ACC/AHA 2025 ACS

Try the next case in the app

Free to start on iPhone and Android.

theshipdoctor.com/app

Open app download options

Choose the destination

23:58 • Rural road • Ten minutes after arrival on scene

A 24-year-old motorcyclist crashed at 23:23. He has a patent airway and is breathing spontaneously. Left basal air entry is reduced. His abdomen is tender and his left thigh is deformed.

HR 128/min **BP 86/54** **RR 28/min** **GCS 14**
SpO_2 95% on high-flow oxygen • Temperature 35.4°C

External bleeding controlled. Pelvic binder at 23:52, leg immobilised, IV access established, TXA 1 g started at 23:55. You can support ventilation now. No blood on the ambulance.

12 minutes to the local unit with emergency airway support but no blood or surgical team tonight. **48 minutes** to blood, surgery and interventional radiology. Air retrieval is grounded. The regional network supports direct major trauma centre transfer when immediate lifesaving needs can be met en route.

Write your radio pre-alert

Situation Unit, patient, severity, destination and ETA.

Background Mechanism, timing and care already given.

Assessment Working concern and key observations.

Recommendation What should the receiving team prepare?

Make the pre-alert count

Model radio call • Compare each line with your own handover.

Move now, after immediate lifesaving interventions. In this network, direct transport to the major trauma centre gives access to blood and definitive haemorrhage control. Discuss deterioration or a changed capability with medical control.

S **Situation**
“Unit 42 with a 24-year-old rider in shock. We are leaving for your major trauma centre at 23:58. ETA 00:46.”

B **Background**
“Motorcycle collision at 23:23. Pelvic binder at 23:52, IV access, leg immobilised, TXA 1 g started at 23:55. No prehospital blood.”

A **Assessment**
“Pulse 128, BP 86/54, RR 28, GCS 14, temperature 35.4°C. Possible internal bleeding. Reduced left basal air entry and a tender abdomen.”

R **Recommendation**
“Please activate the trauma and major haemorrhage teams and have warmed blood and a surgeon ready. Confirm activation and advise on any destination change.”

When would you divert?

If a lifesaving intervention becomes urgent that cannot be delivered by the crew, divert to the nearest capable unit under the regional plan. Worsening chest signs with instability should trigger assessment for tension pneumothorax and immediate treatment within scope. Reassess ventilation, perfusion and neurological state and keep the patient warm.

Clinical sources NICE NG40 · destination NG39 · initial care

Fever and confusion

15:10 • Malaria-endemic area • Six hours by road to hospital

A 31-year-old agricultural worker weighing 70 kg has had fever for three days. His colleagues now carry him into your clinic. He cannot swallow safely. His airway is currently patent and he is breathing spontaneously.

Glucose 2.0 mmol/L • GCS 9 (E2 V2 M5)

HR 124/min BP 94/60 RR 32/min SpO_2 94% on air

Temperature 39.4°C. Jaundice. Falciparum rapid test positive.

At hand: IV access, 10% glucose, oxygen, a glucometer and three 60 mg vials of injectable artesunate with their manufacturer-supplied diluent. No further vials are available here today. The receiving hospital has antimalarials and critical care. The aircraft can launch now but cannot fly at night.

1. Which immediately reversible problem will you treat?

2. What adult artesunate dose is needed? Show the calculation.

3. When will you call retrieval and what must travel with him?

Treat and transfer in parallel

Hypoglycaemia and severe malaria each require immediate action.

Protect the airway and correct the glucose

Support airway and breathing. Give **25 g IV glucose (250 mL of 10%) over a few minutes** per the WHO adult severe-malaria handbook. Recheck in 10–15 minutes, repeat if needed and continue monitoring for recurrence. Plan ongoing glucose while oral intake is unsafe.

Start IV artesunate while arranging retrieval

70 kg × 2.4 mg/kg = 168 mg IV now. Prepare using the instructions for the supplied product. Three 60 mg vials provide 180 mg in total, enough for the first dose only. Record dose, route and administration time.

Plan across the next dose

Request retrieval now. Send trends in glucose, GCS, breathing, perfusion, fluids and drug times, with glucose and airway support in transit. Assess for sepsis or another cause of coma and treat suspected coinfection per protocol. Give artesunate again at 12 and 24 hours, then daily if required. After at least 24 hours of parenteral treatment and once oral therapy is tolerated, complete a full oral ACT per national guidance.

Clinical sources WHO malaria · 2026 WHO severe malaria · p. 48

Read the On-Call Playbook sample

29 worked cases for the ward, ED and remote clinic.

theshipdoctor.com/products/on-call-emergency-playbook

See the free book sample

Browse all three books