

EMERGENCY CARE READINESS PROGRAMME

1

DAY 1 · CODE BLUE READY

When the heart stops, the team starts.

High-quality CPR, safe defibrillation, and a code team that knows exactly who does what.

Aligned with the AHA 2025 Guidelines for CPR & Emergency Cardiovascular Care.

Lima Primary Health Centre

Mixed multidisciplinary team

Lecture · Skills · Simulation · Audit

STRONGER FIRST RESPONSE. SAFER NEXT STEP.



5 DAYS · 5 SKILLS · ONE READY TEAM

The programme at a glance

Every day runs the same loop: lecture → skills stations → case simulations → performance audit.

1

TODAY

DAY 1

Code Blue Ready

BLS & high-quality CPR, AED and safe defibrillation, code team roles, closed-loop communication.

2

DAY 2

Recognise Before Collapse

Triage and red flags, the ABCDE approach, NEWS2 early-warning scoring, escalating with confidence.

3

DAY 3

Paediatric Emergencies

The sick child, respiratory distress, shock, seizures, anaphylaxis, paediatric BLS and choking.

4

DAY 4

Safe Birth, Safe Start

Postpartum haemorrhage, eclampsia, maternal collapse, newborn resuscitation.

5

DAY 5

Stabilise & Transfer

Escort bag, HP-218 / HP-249, SBAR handover, monitoring en route, transfer by sea and air.

BY THE END OF TODAY YOU CAN...

Six things, and we will test every one of them

1

Recognise arrest instantly

Unresponsive plus absent or abnormal (agonal) breathing — start CPR without waiting for permission.

2

Deliver high-quality CPR

Correct rate, depth and recoil, minimal interruptions, timed compressor switches.

3

Use the AED safely

Pad placement, rhythm analysis and safe shock delivery within three minutes of collapse.

4

Work as a code team

Know all six core roles — and take any one of them at a moment's notice.

5

Communicate closed-loop

Directed order, check-back, confirmation. No order left hanging in the air.

6

Run and document a code

Use the crash cart, record interventions and times, hand over cleanly post-ROSC.

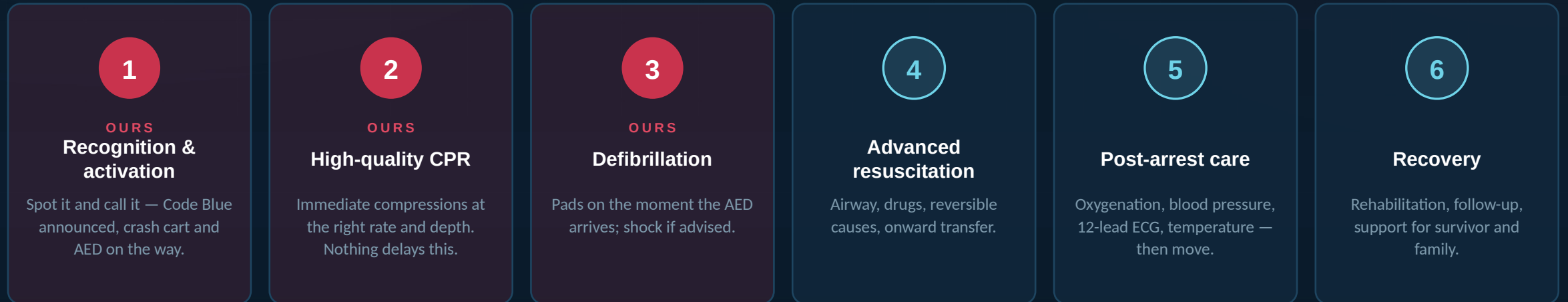
01

Recognise & Respond

Every minute between collapse and defibrillation, with no CPR in progress, costs roughly 7–10% of the chance of survival from a shockable arrest. Nothing else today matters if the first thirty seconds are lost.

One Chain of Survival

Adult and paediatric, in- and out-of-hospital arrest are merged into a single chain — one shared mental model for every arrest, anywhere.



WHERE WE LIVE

Our centre owns the first three links. In a primary health centre survival is decided in the first four to five minutes — before any ambulance arrives at the door. There is no cavalry coming: everyone in this room IS the resuscitation team.

TEN SECONDS, NOT ELEVEN

Recognising cardiac arrest

CHECK — MAXIMUM 10 SECONDS

Unresponsive?

Shout and tap both shoulders — no response.

Not breathing normally?

Watch the chest for ≤ 10 s. Agonal gasps are NOT breathing.

No definite pulse? (HCP)

Carotid check at the same time as the breathing check. If unsure — treat as arrest.

THEN — ACT IMMEDIATELY

Shout for help & activate Code Blue

Name a person: “You in the blue — bring the crash cart and the AED.”

Start compressions NOW

Hard surface, centre of the chest. No delay for the airway, the trolley, or the doctor.

Attach the AED the moment it lands

Compressions continue while the pads go on.

THE COMMONEST FAILURE IN THIS BUILDING

Mistaking agonal gasps for breathing, and waiting. Agonal breathing is noisy, irregular, snoring or fish-like — it is a sign of arrest, not of life. If in doubt, compress: CPR on a beating heart does far less harm than no CPR on an arrested one.

SECTION 01

Adult BLS — our centre's sequence

1

Safety & response

Scene safe. Shout and tap.
Unresponsive → call out CODE
BLUE and name someone to
fetch the cart.

2

Breathing & pulse check

Maximum 10 seconds. No
normal breathing, no definite
pulse → arrest confirmed.
Agonal gasps do not count.

3

Compressions × 30

100–120/min, 5–6 cm, full
recoil, counted aloud so the
team hears the tempo.

4

Ventilations × 2

BVM with oxygen, one second
each, just visible chest rise.
Ratio 30:2.

5

AED on arrival

Pads on while compressions
continue. Follow the prompts,
shock if advised, resume CPR
instantly.

30:2

Compression : ventilation ratio
adult, no advanced airway

2 min

Rhythm check & compressor
switch cycle

< 10 s

Maximum pause in compressions
— for anything at all

1 s

Each rescue breath
— just visible chest rise

THE NUMBERS THAT SAVE LIVES

High-quality CPR

100–120

Compressions per minute — use a metronome or the defibrillator prompt

5–6 cm

Depth in an adult — about one third of chest depth; push hard, allow FULL recoil

 $\geq 80\%$

Chest compression fraction — the AHA floor is 60%; this is the LIMA PULSE target

Full recoil, every compression

Leaning on the chest between compressions is the most common quality failure in real codes. The chest must come all the way back — that is when the heart fills.

Switch compressor every 2 minutes

Quality falls sharply after two minutes even when the rescuer swears they are fine. Switch during the rhythm check so the pause costs nothing.

Do not over-ventilate

One second per breath, just visible chest rise. Hyperventilation raises intrathoracic pressure, chokes venous return and drops cardiac output.

Minimise every pause

Pre-charge the defibrillator during compressions, plan the role change before it happens, resume the instant the shock is delivered.

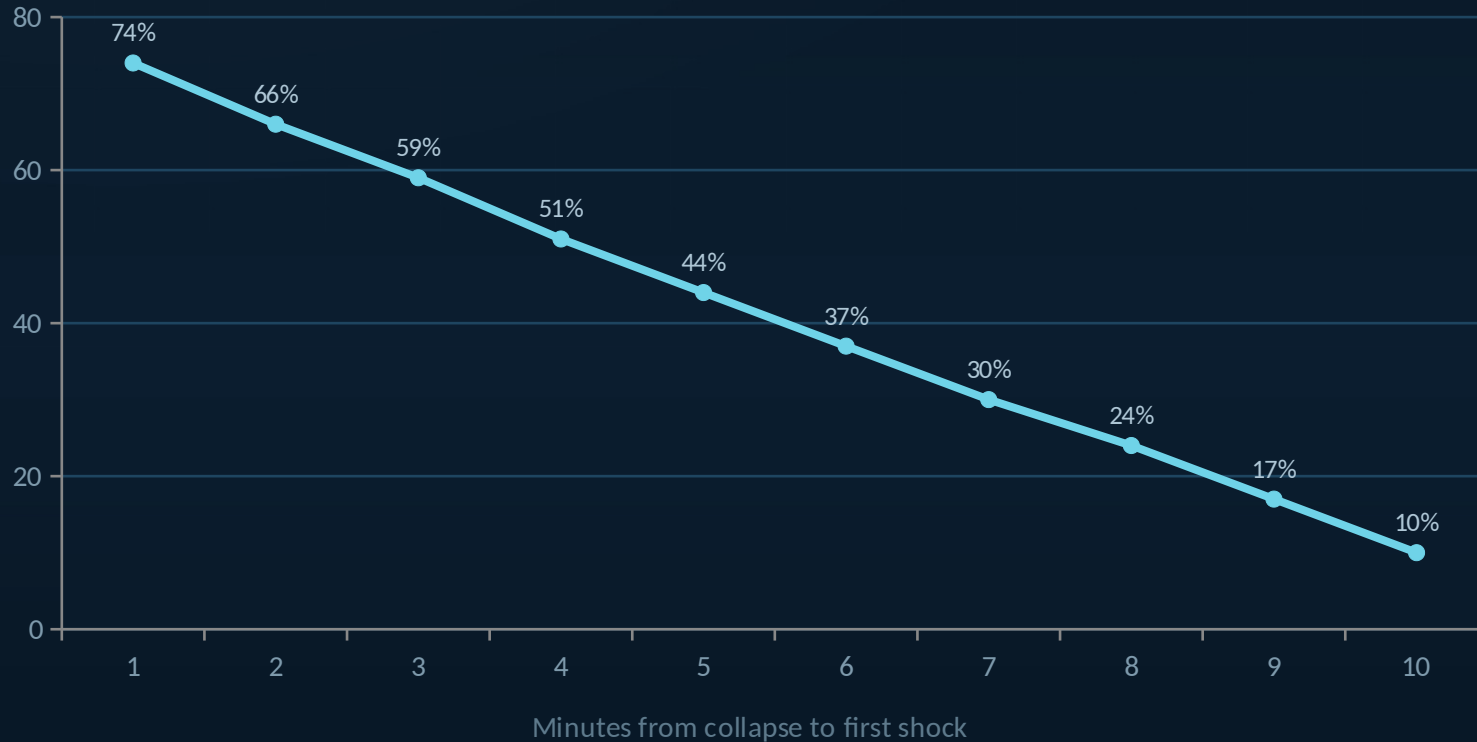
02

Defibrillation

Time-to-first-shock is the single strongest modifiable predictor of survival in a shockable rhythm.
Our target: under three minutes from collapse to first shock. The AHA in-hospital benchmark is two.

WHY MINUTES MATTER

Survival falls with every minute of delay



≤ 3 min

LIMA PULSE target from collapse to first shock
(AHA in-hospital benchmark: ≤ 2 min)

Read this correctly

An illustrative curve based on the widely cited 7–10% absolute fall in survival per minute without defibrillation. Real figures vary with bystander CPR, witnessed status and rhythm.

Where CPR is already in progress the decline is roughly halved — which is exactly why compressions never stop while the pads go on.

AED & manual defibrillator — safe use in six steps

1 Power on

Open the lid or press ON. The device talks — do what it says, in the order it says it.

2 Bare & dry the chest

Clothing off, water dried. Shave the pad sites only if the pads genuinely will not stick.

3 Attach pads

Right upper sternal border and left mid-axillary line. Compressions do not stop for this.

4 Analyse

“Stand clear” — nobody touches the patient, the bed, or the fluids during analysis.

5 Shock if advised

Charge DURING compressions. Clear visually and verbally. Deliver.

6 Resume CPR

Immediately — before the monitor, before any pulse check. Two minutes, then reassess.

THE SAFETY SEQUENCE — SAID OUT LOUD, EVERY SHOCK, NO EXCEPTIONS

“Oxygen away — I'm clear — you're clear — everybody clear.”

Visual sweep head to toe · free-flowing oxygen off the chest · compressor's hands lifted · the shock delivered ONLY by the person at the defibrillator · then “Shock delivered — resume compressions.”

Pad placement — the heart must sit between the pads

ANTEROLATERAL — THE DEFAULT

Pad 1 — right upper chest, just below the clavicle, beside the sternum.

Pad 2 — left mid-axillary line, below and lateral to the left nipple, roughly at the 5th–6th intercostal space.

Two pads side by side on the front of the chest shock nothing but skin.

1 Right upper chest, below the clavicle

2 Left mid-axillary line

WHEN IT IS NOT STRAIGHTFORWARD

Wet chest

Dry it fast with a towel — water bridges the pads and diverts current across the skin.

Very hairy chest

Press firmly; if they will not stick, rip them off or shave. Do not spend a minute on it.

Pacemaker / ICD

Never place a pad over the device — keep a clear margin (8 cm is the usual figure). Do not skip the shock.

Medication patch

Remove it and wipe the skin. GTN patches can arc and burn.

Pads will not fit

Use anterior–posterior placement, or paediatric pads and attenuator per the device.

Shockable vs non-shockable

SHOCKABLE · VF / pVT

Shock immediately

Biphasic at the manufacturer's setting (typically 120–200 J); monophasic 360 J. Then straight back to compressions.

Adrenaline 1 mg IV/IO

After the initial defibrillation attempts have failed — in practice after the second shock — then every 3–5 minutes.

Amiodarone 300 mg IV/IO

After the third shock; a further 150 mg may follow. Lidocaine 1–1.5 mg/kg is an equally acceptable alternative.

Rhythm check every 2 min

Switch compressor at the same moment. Pre-charge during compressions.

NON-SHOCKABLE · ASYSTOLE / PEA

No shock — ever

Shocking asystole costs compressions and achieves nothing. Confirm the flat line: leads, gain, second lead.

Adrenaline 1 mg IV/IO early

The moment access is available, then every 3–5 minutes. Early adrenaline matters more here than anywhere.

No routine antiarrhythmic

Amiodarone and lidocaine have no role in a non-shockable rhythm.

Hunt the reversible cause

PEA is a diagnosis waiting to be made. One named person runs the Hs & Ts aloud.

WHAT CHANGED

The AHA 2025 update — what actually affects you

One unified Chain of Survival

Adult and paediatric, in- and out-of-hospital arrest merged into a single chain — one vocabulary for every arrest.

Back blows come first in choking

Adults with severe obstruction: 5 back blows, then 5 abdominal thrusts, alternating until relieved — or CPR if they go unresponsive.

Naloxone is written into BLS

The algorithm now shows where naloxone fits in suspected opioid overdose. Give it — but never delay CPR for it.

Mechanical CPR — NOT routine

Routine use shows no documented benefit and is not recommended. Reserve for where manual compressions are impractical or unsafe.

Airway in head/neck trauma

If a jaw thrust fails to open the airway, use a head tilt–chin lift. An unopened airway is the bigger risk.

Cardioversion energy

For atrial fibrillation an initial biphasic setting of at least 200 J is reasonable; 200 J may be reasonable for flutter.

UNCHANGED, AND STILL THE WHOLE GAME

30:2 · rate 100–120/min · depth 5–6 cm · full recoil · minimal interruptions · early defibrillation.

The 2025 update refines high-quality BLS. It does not replace it. If you remember nothing else from today, remember that list.

03

The Code Blue Team

Resuscitations rarely fail on knowledge — they fail on coordination. Two people doing the same job, nobody doing another, an order given to the room and picked up by no one.

SECTION 03

Six core roles — know them all, take any of them

Team leader

Stands at the foot of the bed and touches nobody. Assigns roles by name, runs the algorithm, decides shocks and drugs, summarises every two minutes, leads the debrief.

Compressor

High-quality compressions, counts aloud, hands over every two minutes. The second compressor stands ready and swaps at the rhythm check.

Airway

Head position, OPA, two-handed seal on the BVM with oxygen at 15 L/min, timing 30:2 with the compressor.

Defibrillation

Brings and operates the AED, owns safety at every shock, announces the rhythm and the shock number out loud.

Drugs / IV access

Secures IV or IO access, prepares and gives drugs on the leader's order, repeats back dose and route, flushes and labels.

Recorder / runner

Logs the times — arrest, shocks, drugs, cycles. Calls the two-minute intervals. Runs for equipment and calls the ambulance.

POSITIONING RULE

The leader stands at the foot of the bed and does not touch the patient. The moment the leader starts compressing, the team loses its only pair of eyes on the whole picture.

SECTION 03

Closed-loop communication

An order given to the room is an order given to nobody. Four steps, every single time.

1 Directed order

TEAM LEADER

"Sara — adrenaline 1 milligram IV, now."

A name. Eye contact. A dose and a route.

2 Check-back

SARA (DRUGS)

"Adrenaline 1 milligram IV — drawing it up."

The order has been heard correctly.

3 Confirmation

SARA (DRUGS)

"Adrenaline 1 milligram IV is IN — 14:32."

With a time. The loop is closing.

4 Acknowledgement

TEAM LEADER

"Heard — adrenaline in at 14:32. Next dose 14:36."

The next action is already set.

TEAM BEHAVIOURS THAT PREVENT DISASTERS

No orders into the air — an undirected order is an ungiven drug.

Anyone may speak up: "I'm not comfortable — can we re-check that?" is a protected sentence in this centre.

Share what you know, and the leader summarises every two minutes: rhythm · cycle count · drugs given · next action.

REVERSIBLE CAUSES

The Hs & Ts

In every non-shockable arrest the leader assigns one named person to work through this list ALOUD — not silently.

H · THE FIVE Hs**Hypoxia**

Airway open? Oxygen flowing? Chest actually rising?

**Hypovolaemia**

Bleeding, vomiting, sepsis, anaphylaxis. Fluids wide open.

**Hydrogen ion (acidosis)**

Prolonged arrest, DKA, renal failure. Ventilate.

**Hypo-/hyperkalaemia**

Dialysis? Diuretics? The commonest fixable metabolic cause.

**Hypothermia**

Cold exposure, drowning, elderly on the floor overnight.

T · THE FIVE Ts**Tension pneumothorax**

Trauma, asthma, COPD, after positive-pressure ventilation.

**Tamponade (cardiac)**

Trauma, post-MI, malignancy, uraemia.

**Toxins**

Opioids, beta-blockers, calcium-channel blockers, tricyclics.

**Thrombosis — pulmonary**

Sudden collapse, recent surgery, immobility, leg swelling.

**Thrombosis — coronary**

Chest pain before collapse, known ischaemic heart disease.

After ROSC — the job is not finished

1 Airway & oxygen

Titrate SpO₂ to 90–98% (AHA 2025). Avoid hypoxia AND hyperoxia — 100% oxygen indefinitely is not a neutral choice.

2 Blood pressure

Target MAP ≥65 mmHg — the AHA 2025 number. Systolic ≥90 is a bedside proxy. Fluids first, then early vasopressor referral.

3 12-lead ECG

Look for STEMI. This single tracing changes the destination and the urgency of the transfer.

4 Glucose & temperature

Treat hypoglycaemia. Avoid fever. Do NOT attempt active cooling in this setting.

5 Arrange urgent transfer

Every ROSC patient needs ICU-capable care. Stabilise, monitor, hand over with SBAR — that is Day 5.

6 Debrief the team

Before everyone scatters. What went well, what was slow, what changes tomorrow. Five minutes, every code.

SCOPE NOTE FOR THIS CENTRE

Targeted temperature management, neuro-prognostication and vasopressor infusions belong to the receiving ICU, not to us. Our job is airway, oxygenation, blood pressure, glucose, a 12-lead ECG, and a fast, well-handed-over transfer.

THIS AFTERNOON

Three stations — everyone passes individually

1

STATION 1

CPR skills

Two-minute continuous compression cycles on the manikin with rate and depth feedback. Two-person BVM technique. 30:2 timing.

2

STATION 2

AED & safety

Pad placement, the full verbal safety drill, pacemaker and wet-chest variations, and resume-CPR speed measured in seconds.

3

STATION 3

Code simulation

Full team scenarios from the Day 1 case cards: VF arrest, PEA arrest, opioid overdose. Roles rotate; observers audit with the checklist.

HOW WE CLOSE THE LOOP

Observers complete the Day 1 audit checklist during every simulation. Results are anonymised, discussed in the debrief the same afternoon, and re-audited at the next unannounced mock code.

Training that is not re-measured is training that decays.

KEY TAKE-HOMES

Six things to carry out of this room

- 1 Unresponsive and not breathing normally = start CPR. If in doubt, compress.
- 2 Push hard, push fast: 100–120/min, 5–6 cm, full recoil, every pause under 10 seconds.
- 3 Shock early — our target is under three minutes from collapse to first shock.
- 4 Six roles, one leader, and closed-loop communication on every single order.
- 5 AHA 2025: one Chain of Survival, back blows first in choking, naloxone in the BLS algorithm.
- 6 ROSC is the start of the next job — stabilise, monitor, transfer, debrief.

Next session: Day 2 — Recognise Before Collapse (triage, red flags, ABCDE, NEWS2)

ASSESSMENT

Twenty questions, twice.

The same twenty items are answered before the lecture and again after the simulations.

The difference between the two scores is the outcome measure for Day 1 — for each person, and for the centre.

Nothing is named. Everything is counted.

20

Questions, identical both sittings

~8 min

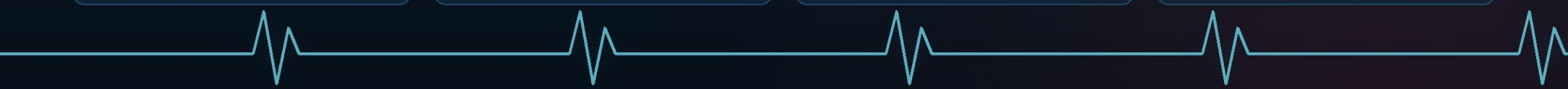
To complete

80%

Post-class pass mark

100%

Attendance — everyone sits it



STRONGER FIRST RESPONSE. SAFER NEXT STEP.