UK Adult Implantable LVAD Emergency Algorithm

Implantable LVAD patient unresponsive +/- not breathing normally

Dial:	2222
State:	"CARDIAC ARREST"
Location:	WARD/AREA
Wait:	For switchboard to repeat the information

Do not start CHEST COMPRESSIONS, delay for maximum 2 minutes

LONE / INITIAL RESPONDER

C **STEP 1:** CHECK IS LVAD WORKING?

SECOND RESPONDER / TEAM

A Ensure patent airway, give oxygen
B Assess and treat problems with breathing
Start bag mask ventilation if needed
C Attach ECG leads / Defibrillator

WHAT DOES LVAD SCREEN DISPLAY? GO TO BOX WITH RELEVANT SCREEN MESSAGE

BLANK CONTROLLER

Push any button on controller
Check/Change power source
Change controller if display remains blank

CONTROLLER FAILURE

Change controller

HIGH WATTS

Suspect pump thrombus

DRIVELINE DISCONNECTION

Reconnect driveline and examine its entire length
If fractured, manipulate and secure with tape

LOW / CRITICAL BATTERY

Change Battery
or
Attach to mains power

LOW FLOW ALARM

Passive leg raise
If effective give fluid bolus (eg 250ml)
Aim MAP: >60 and <90 mmHg
Consider bleeding (eg GI check Hb)

ECG SHOWS VT/VF

(Antero-posterior pad position preferred)
Unresponsive patient:
Defibrillation - Attempt 3 stacked shocks
Responsive patient:
Consider amiodarone or lignocaine
DC Cardioversion with sedation

Normal controller display or interventions above performed

STEP 2: IS THE PATIENT IN CIRCULATORY FAILURE?

Check is the...
Patient responsive?
Patient not cyanosed?
Capillary refill < 3 seconds?
Doppler MAP 60-90 mmHg?
LVAD humming?
Controller display normal?
LVAD flow rate > 3.0 L/min?
Endotracheal $ETCO_2$ >2 kPa?

ONCE ECHO AVAILABLE

Look for
RV Failure
Suction
Tamponade
Thrombus

Yes

<10d postop: Chest re-opening

>10d postop: Start CPR & standard ALS and consider/correct:
4H Hypoxia, Hypovolaemia, Hypo/hyperkalaemia, Hypothermia
4Ts Thrombosis, Tamponade, Tension, Toxin

Consider temporary mechanical circulatory support

No

STEP 3: IS THIS NON-LVAD RELATED?

Complete A to E Assessment

Low GCS: Exclude Stroke as priority