



UK Impella Emergency Algorithm



Impella patient unresponsive and/or not breathing normally AND
MAP <30mmHg and/or ETCO₂ <2kPa

Dial:
State:

2222

"Cardiac Arrest" & Ward/Area

Reduce to P2 and start CPR

Impella Team

Expose patient and inspect Impella
from insertion site to console

Patient Team

Standard ALS

Assess for 4H & 4Ts:

Hypoxia, Hypovolaemia, Hypo/hyperkalaemia, Hypothermia
Thrombosis, Tamponade, Tension, Toxin

Go to box with relevant screen display

Suction

Give a fluid bolus (eg 2.5ml/kg)
Expose patient & look for bleeding

Impella stopped - Controller failure

Exchange to backup controller - ensure yellow
luer momentarily disconnected before transfer

Impella stopped

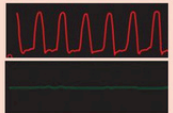
P setting to P-8, if fails then P-2.
If fails wait 1 minute and try again.
If does not restart remove/exchange Impella

Impella position unknown/in ventricle/in aorta

Signal trace before cardiac arrest:

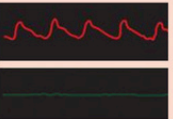
Too far in:

Motor Current: Flat, Placement signal: LV trace
Action: Under echo pull back catheter to
optimal position. Return to previous P setting.



Too far out:

Motor Current: Flat, Placement signal: Aortic trace
Action: If pigtail in LV, advanced under echo guidance.
Return to previous P setting.



Placement signal low

Increase P setting support to maximum tolerated
Consider adrenaline infusion for cardiac dysfunction or vasoplegia

Pause CPR - Is there adequate circulation?

Assess MAP, ET ETCO₂ and SpO₂

Echocardiography during pause

Confirm correct Impella position
(AV to inlet: Impella CP = 3.5cm Impella 5.5 = 5cm)
Exclude cardiac tamponade
Assess & optimise ventricular function

MAP >55, ETCO₂ >2, SpO₂ >88%

Complete A to E Assessment

MAP 30-55, ETCO₂ >2kPa, SpO₂ <88%

Optimise P setting
Optimise ventilation
Optimise vasoactives and fluid status
Consider escalation of mechanical
circulatory support

MAP <30, ETCO₂ <2kPa, No SpO₂

Restart CPR
If <10d post-sternotomy consider
chest re-opening
Consider VA ECMO