



STANDARD OPERATING GUIDELINES

Revisions:
New

Revised By:
EMS00 - Humphrey

Section: 1

Number: 25

Guideline: Critical Patient Transfer of Care

Effective Date: April 30, 2024

Revision Date:

Chief: *Cody Gundlock*

CRITICAL PATIENT TRANSFER OF CARE

PURPOSE: To increase patient safety during clinical handover of cardiac arrest patients. Secondly, to increase patient safety during clinical handover of any patient who EMS is providing life sustaining therapy, to which, any gap in treatment will likely result in rapid deterioration.

SCOPE: Applicable to all cardiac arrest patients that achieve ROSC and/or are transported to a hospital. Any patient receiving life sustaining therapy from EMS at the time of clinical handover.

RESPONSIBILITY: All front-line providers

BACKGROUND:

LFES has discovered a trend of Post ROSC patients experiencing a 2nd cardiac arrest during clinical handover at CRH ER. While it is not uncommon for unstable patients to have clinical deterioration during our care, this is the only subgroup where rapid progression to cardiac arrest happens during patient handover at the ER. The cause of this trend is almost always untreated and/or unrecognized critical hypotension. Our experience with post ROSC hypotension has demonstrated that the pathology will progress to cardiac arrest within minutes if it is not actively treated with all protocols concurrently.

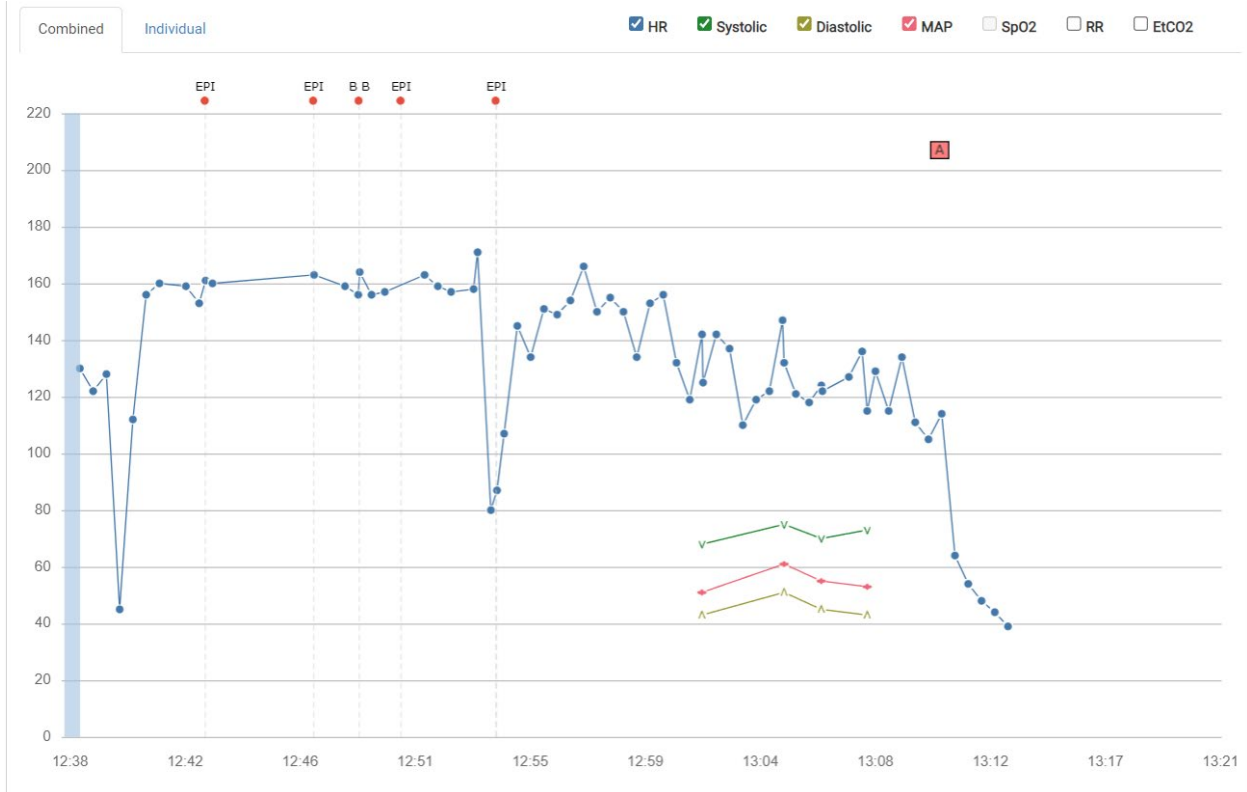
LFES has met with CRH ER and have choreographed this vital portion of patient care. The intention of this guideline is to enable members to actively form the link in the chain of survival by collaboration with the ER team.

Examples of Pathology

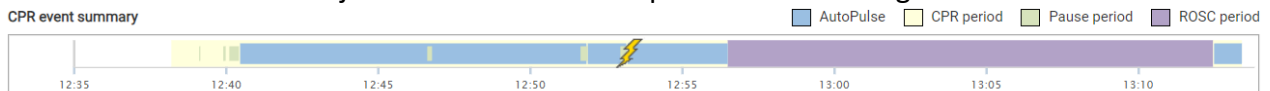
1. In the below example our members achieved ROSC and were actively managing hypotension with Push Dose Epi and fluid. The crew had sustained ROSC for almost 20min. As the crew approached the hospital, BPs stopped being taken while patient packaging started for the move into the ER. Approx. 4-5min went by without intervention and the patient rearrested in the trauma room.



Untreated hypoperfusion leading to bradycardia and then arrest.



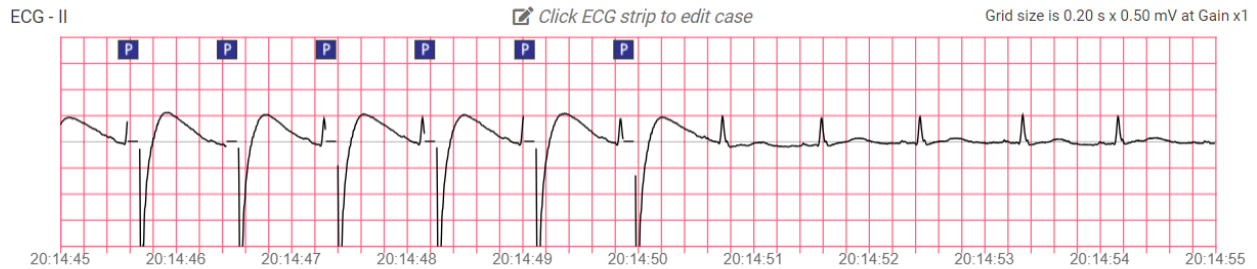
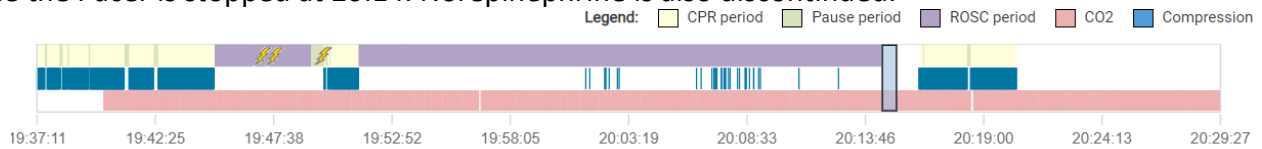
Notice the second blue section just after 1310 which represents CPR during clinical handover.



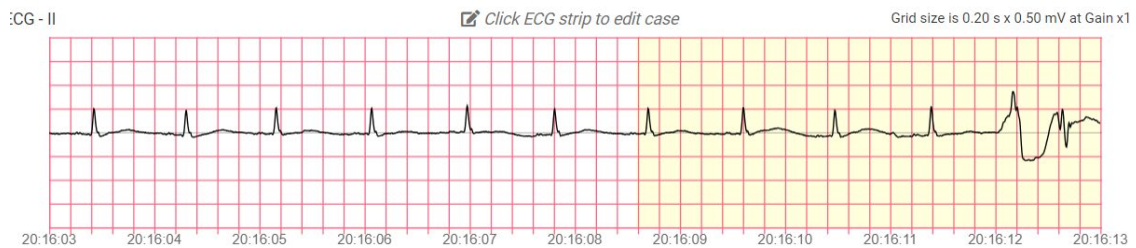
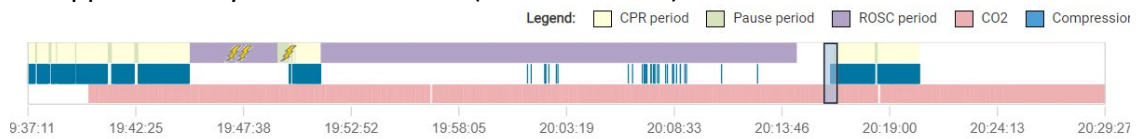
2. In the following example our members were treating a post ROSC hypotensive patient with concurrent norepinephrine, pacing and fluid. During clinical handover the pacer was turned off and the norepinephrine infusion was stopped. The patient rearrested prior to the ER staff reinitiating the interventions.



Notice the Pacer is stopped at 20:14. Norepinephrine is also discontinued.

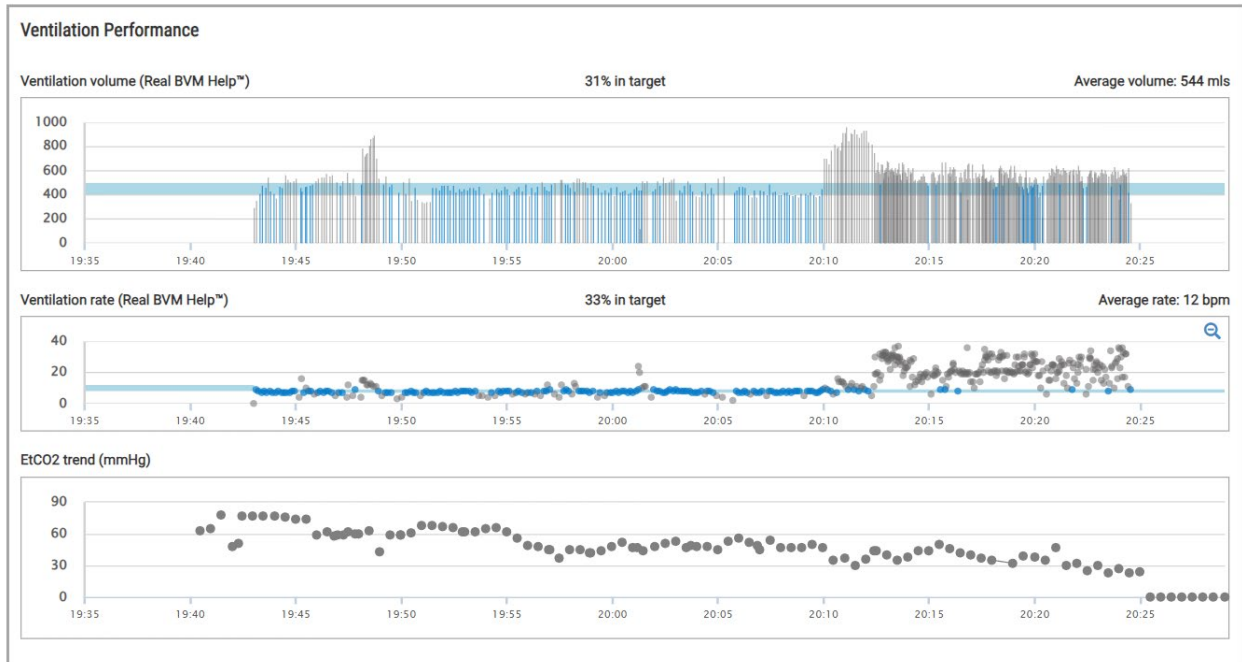


CPR is started approximately 2min later 20:16 (Yellow Section).





2a. We must brief the respiratory team of Rate and Volume during clinical handover. Notice last third of this vent performance.





PROCEDURE:

Clinical Handover

To have a successful clinical handover, patient care must continue all the way to the ER Team with no gaps to ensure interventions are passed on seamlessly. Any lapse in treatment will significantly increase risk of another cardiac arrest.

What LFES must do

LFES Members shall give our standard early prenotification and include **any delivery of vasopressors**.

When we arrive in the trauma room and **prior to moving the patient to the ER bed:**

- LFES Team Lead gives ER staff verbal report of patient history while the rest of our members continue patient care.
 - This ensures there is no gap in treatment while the ER team fully understands present pathology.
- Last blood pressure is taken and if applicable norepinephrine infusion adjusted or last push dose EPI delivered. In the case of a pediatric patient, epinephrine infusion adjusted or last PDE delivered.
- Deadly cardiac rhythm check and electrical therapy delivered.
- Respiratory staff briefed on BVM volume/rate.
 - Have Respiratory use the Accuvent to establish “feel” prior to disconnecting.

We can now safely transition the patient to the ED bed:

- Now and only now will LFES Cardiac monitor and equipment be replaced with CRH ER monitor and equipment. (Pacing is an exception to this)

What the ER Team will do

- Prepare norepinephrine or epinephrine (peds) infusion prior to our arrival.
 - The ER uses a different norepinephrine concentration than LFES uses. Work with the ER team to confirm dose.
- Wait to transfer patient to ER bed until report is given.
- Continue pacing on LFES monitor until appropriate treatment is in place to discontinue.
 - We will stay as long as needed with any patient being paced on our monitor.
- CRH Respiratory will confirm LFES ventilation strategy.

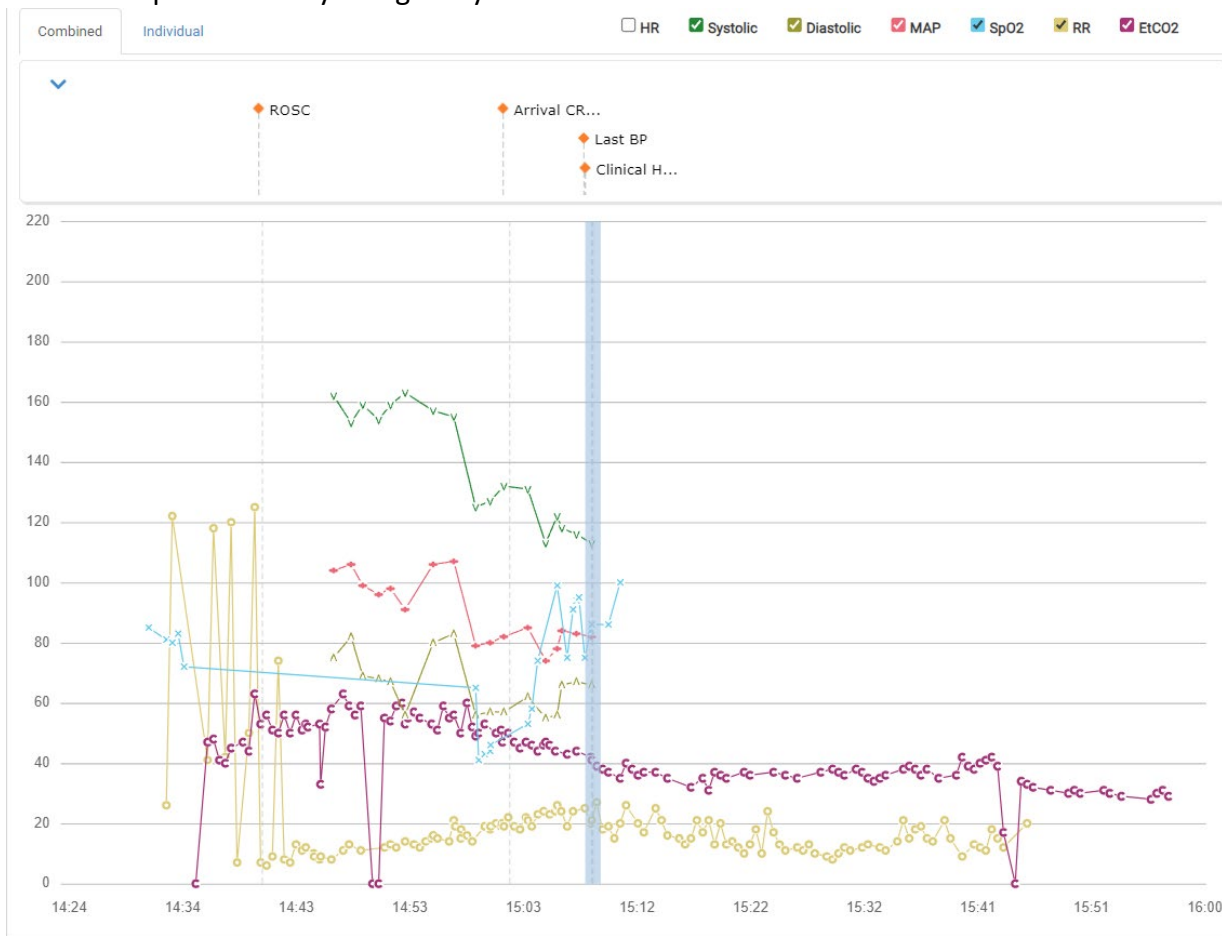


Example of a Successful Handover

After this patient achieved ROSC this crew had 2 NIBP failures and correctly delivered Push Dose Epi, Fluid and started a low dose of a norepinephrine infusion. Notice that after arrival to the ED there are 6 more blood pressures taken by our crew. This represents our members continuing patient care while the ER staff fully understands present pathology and prepares their equipment and treatment for handover.

- This crew and the ER team had a methodical approach to handover.
- They were not in a hurry to disconnect equipment or stop treatment until appropriate measures were in place.
- The entire team took their time to ensure no gaps in patient care and interventions.

Interestingly, shortly after clinical handover the patient required increasing doses of Norepinephrine due refractory hypotension. This is a great example of taking a little extra time that resulted in a significant increase in patient safety and greatly decreased the chance of another cardiac arrest.



Please see poster of a simulation below.



Post ROSC Handover

PRE-ARRIVAL



ER TEAM

- Assign roles, alert lab, RT and DI
- Norepi from fridge (prime with our tubing)
- Lifepak turned on, confirm Zoll transfer plug present and attached
- Place backboard on bed
- Crash cart med tray out and given to med nurse, push dose epi prepared at physician request
- Portable ultrasound in room

LFES TEAM

- Provide standard early notification
- Info patch shall include any admin of vasopressors

1. ARRIVAL



ER TEAM

- Prepare norepinephrine infusion prior to LFES arrival
- Confirm current dosing with LFES Team (different concentrations used)

LFES TEAM

- Team lead gives ER staff verbal report of patient history
- LFES continues patient care on the stretcher
- Ensures no gap in treatment while ER Team preps for handover

2. CLINICAL HANDOVER



ER TEAM

- Continue treatment on LFES monitor until appropriate treatment is in place to discontinue. I.e. pacing, vent, CPR

LFES TEAM

- Take last BP, adjust norepinephrine if applicable or last push dose of EPI delivered
- Deadly cardiac rhythm check and electrical therapy delivered
- RT staff briefed on BVM volume/rate
- RT staff use accuvent to establish "feel" prior to disconnecting

3. FINAL QUESTIONS



ER TEAM

- Once Patient is on the bed transition to LP15 and ED equipment

LFES TEAM

- Safely transition the patient to the ED bed
- Final questions asked and answered