



**STEMI**



**CARDIAC  
ARREST**



**STROKE**



**SEPSIS**



**R<sub>x</sub> SAFETY**



## STEMI Checklist



- Obtain **12 Lead EKG**
- Transmit EKG** to closest PCI facility
- Notify PCI facility to activate "**STEMI Alert**," followed by a brief report.  
(**BLS Providers** should activate a "**STEMI Alert**" when the monitor advises **\*\*\*MEETS ST ELEVATION MI CRITERIA\*\*\***)
- If indicated, administer **Aspirin** 324mg
- Call for prompt **packaging** of the patient
- Place **defibrillator pads** on chest
- Transport** patient
- If indicated, administer **NTG 0.4mg** every 3-5 minutes until pain subsides.  
(If EKG indicates Infererior Wall MI use NTG and opiates with caution)
- Obtain IV** access without delaying transport
- Update PCI facility** of patient's condition and ETA
- Obtain **serial EKG** to document changes

### Indications to obtain a 12 Lead

- Chest Pain (Pain, pressure, aching, vice-like tightness)
- Radiation of Pain
- Pain Location (substernal, epigastric, arm, jaw, neck, shoulder)
- Pale, diaphoresis
- Dyspnea
- Nausea, vomiting, dizziness
- Syncope
- Palpitations or Dysrhythmias
- Heart Rate Extremes - less than 50 or greater than 150
- Decreased exercise tolerance
- Elderly patients, even without any chest (or equivalent) discomfort that have new, unexplained fatigue
- Unconscious Patient (excluding cardiac arrest)



## Right Sided ECG Indications

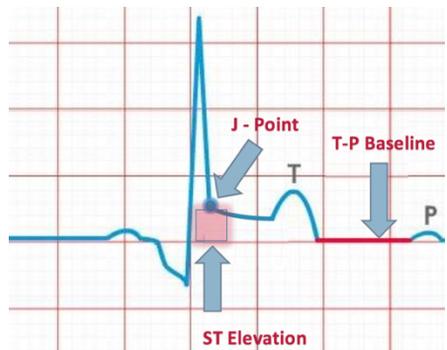
- ST Elevation in the Inferior Leads, II, III, and aVF
- ST Elevation in V1
- Right Bundle Branch Block
- Second- and Third- Degree AV Blocks
- Lead V2 ST Elevation Greater than 50% of the ST Depression in aVF
- Hypotension with clear lung fields

## Posterior ECG Indications

- Convincing Story WITHOUT ST Elevation.
- Septal and Anterior (V1 to V4) ST Depression
- R to S Wave Ratio is  $> 1$  in V1 or V2.

## ECG STEMI Criteria

- $\geq 2$  mm of ST segment elevation in 2 contiguous Precordial Leads in men (1.5 mm for women)
- $\geq 1$ mm in Other Leads (2 contiguous)



Wall Affected	Lead	Artery Involved	Reciprocal
Septal	V <sub>1</sub> .V <sub>2</sub>	LAD	
Anterior	V <sub>3</sub> .V <sub>4</sub>	LAD	
Lateral	I, aVL, V <sub>5</sub> .V <sub>6</sub>	Circumflex	II, III, aVF
Inferior	II, III, aVF	RCA	I, aVL



## Cardiac Arrest Checklist



- Announce Cardiac Arrest to Dispatch**
- Code Commander** is identified
- Defibrillator turned on** as soon as possible, attach pads and ensure the screen is **Visible to Code Commander**
- Metronome Turned On** to maintain proper rate
- Continuous Compressions** with **Full Recoil**, minimizing pauses to less than 10 seconds
- Switch** compressors **Every 2 Minutes**
- Attach ResQPOD**, avoid hyperventilation
- O2** cylinder with **adequate oxygen** is attached
- Capnography Connected**, waveform is present, and value is being monitored
- Assess BLS Airway/**BVM Compliance. Advanced airway management only without pausing** compressions
- Assess for **Gastric distension** place NG or OG Tube to correct
- Obtain **(2) IO access** and administer NSS bolus 20 ml/kg **without pausing** compressions
- Consider Causes:**
  - Tension Pneumothorax
  - Hypovolemia
  - Hypothermia leading to cardiac arrest
  - If dialysis patient, consider Hyperkalemia
  - Family is receiving care** and is at the patient's side
  - Mask** travels with **bag-valve** no matter what airway is in place
  - In cases of **Refractory VF** consider **Double Sequential Defibrillation (DSD)**; after the 4<sup>th</sup> standard defibrillation has not suppressed VF.



# Post-ROSC Checklist



(Before moving patient)

- Announce ROSC to Dispatch**
- Code Commander will continuously **monitor femoral pulse**, capnography, and EKG for **10 minutes** prior to moving the patient
- Remove the ResQPOD**
- Stop Epinephrine Bolus** and obtain a blood pressure
- Apply pulse oximetry and titrate **SpO2 between 94 - 98%**
- If **MAP** less than **70**, augment with IV NSS bolus 20 ml/kg
- If **MAP** less than **65** after fluid bolus, consider a pressor
- Obtain 12-lead ECG** and **Transmit ECG**
- Monitor continuous ETCO2** and ventilation rate if advanced airway
- Mask & ResQPOD** travels with **BVM** no matter what airway is in place
- Package** the patient with **LUCAS** in place, in case of rearrest
- Elevate Head 30°** - to decrease ICP
- Is **transporting** to center capable of **PCI and hypothermia possible?**

## Termination of Resuscitation Checklist

Signs to Continue	Signs to Terminate
<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Gasping</b> During Resuscitation</li><li><input type="checkbox"/> <b>Shockable</b> Rhythm</li><li><input type="checkbox"/> <b>Refractory</b> or Reoccurring <b>VF</b></li><li><input type="checkbox"/> Rapid Rise in <b>ETCO2</b></li><li><input type="checkbox"/> ETCO2 Above <b>15 mmHg</b></li></ul>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Unwitnessed</b> Arrest</li><li><input type="checkbox"/> <b>Non-Shockable</b> Rhythms</li><li><input type="checkbox"/> <b>No Gasping</b></li><li><input type="checkbox"/> ETCO2 less than <b>10 mmHg</b></li><li><input type="checkbox"/> Negatively <b>Trending</b> ETCO2</li></ul>



## Stroke Checklist



- Withhold Oxygen** in the absence of Hypoxia
- Continuously Monitor **Capnography**
- Identify **Last Known Well Time** (LKW)
  - Obtain a **Phone Number** of the next of kin or witness for detailed history
- Complete **B.E.F.A.S.T. Stroke Scale** & record findings
  - **Positive** Stroke Scale is **(1) abnormal** finding
- Complete LVO **RACE Assessment** - Scores of **5 or more** are indicative of a Large Vessel Occlusion
- Obtain **Blood Glucose Level**
  - Rule out **Hypoglycemia** or **Hyperglycemia**
- Package and **Transport** to a **Primary Stroke Facility**
  - If possible, **Transport** with the **witness** for detailed history
- Position** the head of the stretcher at **30°** or less
- Last Known Well Time** (LKW) less than **24 hours** notify receiving hospital to activate **"Stroke Alert"**.
- Report **Extreme Vital Signs** to receiving facility;
  - Systolic BP >185 mmHg
  - Diastolic BP >110 mmHg
- Report if patient is on **Anticoagulation Therapy**
- Obtain 12 Lead ECG & assess for Arrhythmias
- Obtain **IV access** during transportation, **Right AC** is preferred using a 20G Diffusics™ or 18G Standard IV Catheter.
- Escort the patient on **EMS Stretcher** to **CT** with hospital staff

# Rapid Arterial Occlusions Evaluation (RACE)

ITEM	Instruction	Result	Score
<b>Facial Palsy</b>	Ask patient to show their teeth (smile)	<b>Absent</b> (symmetrical movement)	<b>0</b>
		<b>Mild</b> (slight asymmetrical)	<b>1</b>
		<b>Moderate to Severe</b> (completely asymmetrical)	<b>2</b>
<b>Arm Motor Function</b>	Extending the arm of the patient 90° (if sitting) or 45° (if supine) While counting down from 10.	<b>Normal to Mild</b> (limb upheld more than 10 seconds)	<b>0</b>
		<b>Moderate</b> (limb upheld less than 10 seconds)	<b>1</b>
		<b>Severe</b> (patient unable to raise arm against gravity)	<b>2</b>
<b>Leg Motor Function</b>	Extending the leg of the patient 30° (in supine) While counting down from 5.	<b>Normal to Mild</b> (limb upheld more than 5 seconds)	<b>0</b>
		<b>Moderate</b> (limb upheld less than 5 seconds)	<b>1</b>
		<b>Severe</b> (patient unable to raise leg against gravity)	<b>2</b>
<b>Head &amp; Gaze Deviation</b>	Observe eyes and head deviation to one side	<b>Absent</b> (eye movements to both sides were possible and no head deviation was observed)	<b>0</b>
		<b>Present</b> (eyes and head deviation to one side was observed)	<b>1</b>
<b>Aphasia (R side)</b>	<b>Do NOT score the MOTOR DEFICIT again.</b> This is assessing for the understanding of spoken or written words. Ask patient to follow two simple commands: 1. Close your eyes. 2. Make a fist.	<b>Normal</b> (performs both tasks requested correctly)	<b>0</b>
		<b>Moderate</b> (performs only 1 of 2 tasks requested correctly)	<b>1</b>
		<b>Severe</b> (Cannot perform either task requested correctly)	<b>2</b>
<b>Agnosia (L side)</b>	<b>Do NOT score the MOTOR DEFICIT again.</b> This is assessing if the patient can recognize familiar objects and appreciate their deficit. Ask patient: 1. "Whose arm is this?" (while showing the affected arm) 2. "Can you move your arm?"	<b>Normal</b> (recognizes arm and is aware of the deficit to the arm.)	<b>0</b>
		<b>Moderate</b> (does not recognize arm <b>OR</b> is unaware of unaware of the deficit to the arm)	<b>1</b>
		<b>Severe</b> (does not recognize arm <b>AND</b> is unaware of the deficit to the arm)	<b>2</b>
		<b>RACE SCALE TOTAL</b>	



# Sepsis Checklist



- Titrate O2 to **SpO2 between 94 - 98%**
- Could this be a severe Infection?
  - Consider possible source of **Infection**
- Evaluate patient for **HEAT** Criteria
- Continuously Monitor **Capnography**
  - levels < 32mmHg may indicate Sepsis
  - levels < 26mmHg may indicate Severe Sepsis
- Obtain **Vital Signs** every **5 minutes**
- Obtain **Blood Glucose Level**
- Rule out **Hypoglycemia** with altered mental status
  - Infection may cause **Hyperglycemia**
- Obtain **(2) IV or IO access & Rapidly** infuse up to NSS 30 ml/kg if;
  - SBP is <90 mmHg or
  - MAP is <65 mmHg
- If systolic BP remains < 90 mmHg **after 1000mL** of NSS; start **Norephrine (Levophed)** 2-12 mcg/min titrate to maintain;
  - SBP above 90 mmHg or
  - MAP above 65 mmHg
- Notify receiving hospital to activate **"Sepsis Alert"**

## Levophed Preparation

- 1) Mix 2 mg Norephrine in 1000mL Normal Saline
- 2) Using a 10gtts/mL drip set

Dose (mcg/min)	2 mcg/min	4 mcg/min	6 mcg/min	8 mcg/min	10 mcg/min	12 mcg/min
(drops / min)	10	20	30	40	50	60



# Prehospital Sepsis Alert Protocol

Suspected Infection

2 or More **HEAT** Criteria

**H** - Hypotension - MAP less than 65

**E** - ETCO<sub>2</sub> Less than 26

**A** - Altered Mental Status

**T** - Tachypnea - RR greater than 20

Start IVF Bolus  
Correct Hypoxia

**Sepsis Alert**

S

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P

S

I

S

SLURRED  
SPEECH

EXTREME  
SHIVERING OR  
MUSCLE PAIN

PASSING NO  
URINE IN A DAY

SHORTNESS OF  
BREATH

"I FEEL LIKE I  
MIGHT DIE"

SKIN MOTTLED  
OR  
DISCOLORED



# R<sub>x</sub> Safety Checklist

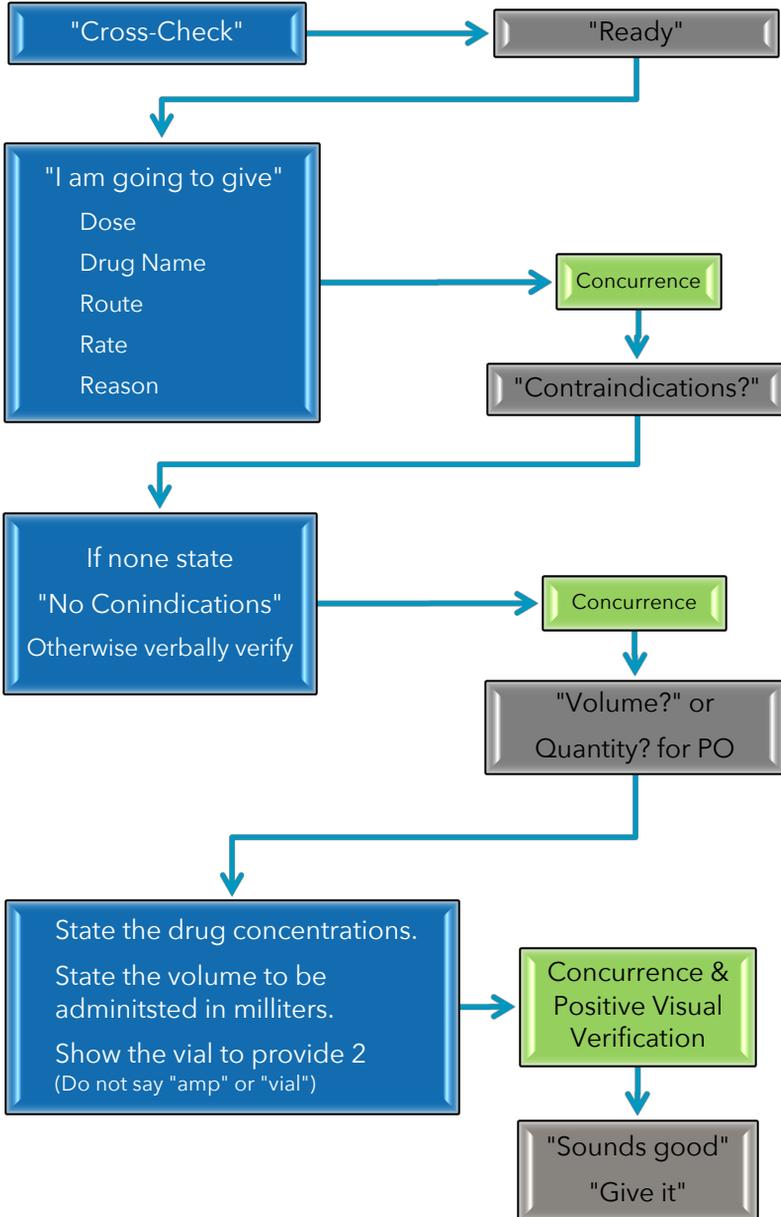


## Provider 1

(Giving the Medication)

## Provider 2

(Remember "R.C.V.")



# 6 Rights of Medication Administration

1

## Right Drug

- Is this the medication indicated per protocol
- Verify the Drug's expiration date

2

## Right Dose

- Is this the correct dose for this illness & route
- Verify concentration & volume using Rx guide

3

## Right Route

- Can this medication be given by this route?
- Is this the correct route for this dose?

4

## Right Time

- Correct duration & time to administer Rx?
- Correct frequency to administer a repeat dose?

5

## Right Patient

- Is this medication indicated for this patient?
- Is there an allergy or contraindication to this Rx?

6

## Right Documentation

- Document the Rx admin immediately after given
- Document in responses or reactions to the Rx