

## ACD-CPR (with ResQPump) + ITD (ResQPOD)

Randomization (pre-assignment to study arm) is by week. The week begins & ends on:

**Sunday at 8:00 a.m.**

Devices for this arm of the study (facemask, syringe, ResQPOD & ResQPump) are supplied in **YELLOW** colored study bags labeled “ACD-CPR+ITD”.

<b>Patients must meet ALL of the following INCLUSION CRITERIA:</b>	<b>DO NOT include a patient if they meet <u>any one or more</u> of the following EXCLUSION CRITERIA:</b>
<b>Age:</b> known or presumed to be $\geq 18$ years <b>Etiology:</b> Presumed non-traumatic cardiac arrest; includes, for example: <ul style="list-style-type: none"> <li>• Cardiac, respiratory or unknown nature</li> <li>• Stroke</li> <li>• Overdose</li> <li>• Smoke inhalation or burns</li> <li>• Drowning</li> <li>• Metabolic imbalance</li> <li>• Seizures</li> </ul>	<b>Age:</b> known or presumed to be $< 18$ years
	<b>Etiology:</b> Obvious or likely traumatic (blunt or penetrating) injuries causing cardiac arrest
	<b>Pre-existing DNR orders</b>
	<b>Signs of obvious clinical death</b> or conditions that preclude the use of CPR
	Family or legal guardians <b>request that the subject not be entered in the study</b> at the time of arrest
	<b>In-hospital</b> cardiac arrest
<b>Recent sternotomy</b> - wound not appearing completely healed (if unknown) or $< 6$ months (if known)	

### **Before the Run**

1. Check the randomization calendar to be sure of the pre-assigned CPR method for the week.
2. Make sure you have both the ResQ Pump and a ResQ POD preloaded on the facemask in each yellow bag, and that these are available attached to the AED/monitor on all vehicles that may respond to a potential cardiac arrest.

### **During the Run:**

1. Assess patient for inclusion/exclusion criteria.
2. If eligible, begin using the ResQPump and ResQPOD **as soon as possible** (within 2 minutes) after arrival.
3. Record the time(s) that each device is applied during CPR.

## RESQ TRIAL RESOURCE GUIDE

### PERFORM PROPER ACD-CPR + ITD:

	<b>Unsecured Airway (Facemask Ventilation)</b>	<b>Secured Airway (ET tube, or Combitube)</b>
<b>Ventilations</b>	Compression to ventilation ratio of 30:2; ventilate over 1 second until you see chest rise	Turn on ventilation timing lights and ventilate with lights over 1 second until you see chest rise
<b>Compression Pauses</b>	Pause to allow ventilations.	Do NOT pause for ventilations.
<b>Compression Depth</b>	Compress to depth of 1.5 – 2". Note lbs. on gauge & use as reference.	
<b>Compression Rate</b>	<b>80/min</b> (use metronome)	
<b>Chest Wall Recoil</b>	Attempt to pull up to -20 to -30 lbs or until just before suction releases.	
<b>Rotate Duties</b>	Rotate every 2 minutes to prevent fatigue.	

1. **Always** attempt resuscitation for at least 30 minutes, or until pulse returns.
2. **Never** leave devices with ER personnel.
3. **Always** remove the ITD upon return of pulses and immediately replace the ITD if rearrest.

**If CPR is indicated, use ResQPump & ResQPOD.  
If CPR not indicated (pulse present), then ø devices.**

4. **Always** remove the ResQ POD if it fills with fluid 2 times.
5. **Continue** to use the ResQPump even if you have suction difficulties as it may still be providing some decompression benefit; discontinue using if the suction difficulties become distracting.
6. **Always** monitor for, manage, and report any adverse event. Discontinue use of device(s) if they do not appear to function as intended.

#### **After the Run:**

7. Place the ITD sticker (with serial number) on your run report form.
8. Record the ResQPump serial number on your run report form.
9. Complete your patient care record as accurately and completely as possible. Remember to document information related to initial cardiac arrest rhythm, patient height and weight, race, & whether arrest was witnessed or bystander CPR was performed.
10. Print or request a code summary and attach it to the run report form.
11. Discard the ResQPOD as you would other airway equipment unless there were problems with it, in which case you should retain the device in a red bag and notify investigators.
12. Clean the ResQPump, check the gauge and suction cup, and return it to the yellow zippered case.
13. Restock the yellow bag with a new **clear** study package containing a facemask, syringe and ResQPOD, along with the cleaned ResQPump.
14. **Immediately after the run (24/7), call the Research Hotline after EVERY cardiac arrest** (where a patient had an absence of pulse for any period of time). This includes cardiac arrests where resuscitation was not initiated (DOAs) and arrests where the patient was not enrolled into the study (e.g. pediatric or traumatic arrests).

You may call the Research Hotline at any time (24/7) with study questions!

## STD-CPR (Current Standard of Care)

Randomization (pre-assignment to study arm) is by week. The week begins & ends on:

**Sunday at 8:00 a.m.**

Devices (facemask & syringe only) for this arm of the study are supplied in **PURPLE** colored study bags labeled “STD-CPR”.

<b>Patients must meet ALL of the following INCLUSION CRITERIA:</b>	<b>DO NOT include a patient if they meet <u>any one or more</u> of the following EXCLUSION CRITERIA:</b>
<b>Age:</b> known or presumed to be $\geq 18$ years	<b>Age:</b> known or presumed to be $< 18$ years
<b>Etiology:</b> Presumed non-traumatic cardiac arrest; includes, for example: <ul style="list-style-type: none"> <li>• Cardiac, respiratory or unknown nature</li> <li>• Stroke</li> <li>• Overdose</li> <li>• Smoke inhalation or burns</li> <li>• Drowning</li> <li>• Metabolic imbalance</li> <li>• Seizures</li> </ul>	<b>Etiology:</b> Obvious or likely traumatic (blunt or penetrating) injuries causing cardiac arrest
	<b>Pre-existing DNR orders</b>
	<b>Signs of obvious clinical death</b> or conditions that preclude the use of CPR
	Family or legal guardians <b>request that the subject not be entered in the study</b> at the time of arrest
	<b>In-hospital</b> cardiac arrest
<b>Recent sternotomy</b> - wound not appearing completely healed (if unknown) or $< 6$ months (if known)	

### **Before the Run**

1. Check the randomization calendar to be sure of the pre-assigned CPR method for the week.
2. Make sure you have a good quality facemask in each purple bag, and that these are available attached to the AED/monitor on all vehicles that may respond to a potential cardiac arrest.

### **During the Run:**

1. Assess patient for inclusion/exclusion criteria.
2. If eligible, begin standard CPR (STD-CPR) **as soon as possible** after arrival.
3. Record the time that CPR is initiated.

## RESQ TRIAL RESOURCE GUIDE

### PERFORM PROPER STD-CPR:

	<b>Unsecured Airway (Facemask Ventilation)</b>	<b>Secured Airway (ET tube, or Combitube)</b>
<b>Ventilations</b>	Compression to ventilation ratio of 30:2; ventilate over 1 second until you see chest rise	Ventilate @ 10/min (once every 10 compressions); each over 1 second until you see chest rise
<b>Compression Pauses</b>	Pause to allow ventilations.	Do NOT pause for ventilations.
<b>Compression Depth</b>	Push hard; Compress to depth of 1.5 – 2”.	
<b>Compression Rate</b>	<b>100/min</b>	
<b>Chest Wall Recoil</b>	Make sure to allow COMPLETE chest wall recoil; use modified hand position if needed to achieve complete recoil.	
<b>Rotate Duties</b>	Rotate every 2 minutes to prevent fatigue.	

1. **Always** attempt resuscitation for 30 minutes or until pulse returns.
2. **Always** monitor for, manage, and report any adverse event.

#### **After the Run:**

3. Complete your patient care record as accurately and completely as possible. Remember to document information related to initial cardiac arrest rhythm, patient height and weight, race, whether arrest was witnessed or bystander CPR was performed.
4. Print or request a code summary and attach it to the run report form.
5. Grab a new **purple** study package containing a facemask and syringe and place it in the purple study bag labeled “STD-CPR”.
6. **Immediately after the run (24/7), call the Research Hotline after EVERY cardiac arrest** (where the patient had an absence of pulse for any period of time). This includes cardiac arrests where resuscitation was not initiated and arrests where the patient was not entered into the study (e.g. pediatric or traumatic arrests).

You may call the Research Hotline at any time (24/7) with study questions!

## RESQ TRIAL RESOURCE GUIDE

### Scenario 1: ACD-CPR + ITD (Pump and Pod, Yellow)

#### Objectives:

- Review procedure for correctly following randomization schedule
- Review patient inclusion/exclusion criteria for the ResQ Trial
- Review call-in procedure for DOAs and other patients excluded from the ResQ Trial

You are dispatched to the home of a 46 yo female, unresponsive, and not breathing as a result of an apparent hanging. The RP is the daughter, who tells dispatchers that her mother has a history of depression. Daughter describes to the dispatcher what appears to be agonal respirations, but is unable to perform CPR.

*At this point, does this patient meet inclusion criteria for the ResQ Trial?*

*If appropriate, what method of CPR will you use in this resuscitation attempt?*

Upon arrival, patient is found lying on the floor, and you confirm the mechanism of injury/arrest. Patient's skin is pale and cold. You begin CPR.

*For how long should this resuscitation be attempted?*

*Does this patient need to be reported to the ResQ Trial Hotline?*

*If there were DNR orders, or if the patient was determined to be DOA, would you still need to report this call to the hotline?*

*Where would you find the ResQ Trial hotline phone number?*

## RESQ TRIAL RESOURCE GUIDE

### Scenario 2: S-CPR (Standard CPR, Purple)

#### Objectives:

- Review patient inclusion/exclusion criteria for the ResQ Trial
- Apply and use the AED according to current AHA guidelines
- Correctly perform manual CPR with the modified hand position to allow full chest recoil
- Demonstrate delivery of 1-second breaths (during all CPR) at the appropriate rate

You are called to an apartment for a patient (20s male) found unresponsive on the couch by roommate when he arrived home. No obvious trauma. Roommate states patient had fight with girlfriend last night and last spoke with him one hour ago. PMHx: Heavy drinker. Meds: Denies.

*Does this patient meet inclusion criteria for the ResQ Trial?*

*When should the AED pads be applied?*

*What is the compression:ventilation ratio for this patient? What is the compression rate?*

*How many cycles of CPR should be performed before the rhythm is first assessed?*

The AED indicates “no shock advised”. You continue CPR. The patient is successfully intubated with a Combi-tube or ET tube.

**Note:** All rescue breaths should be given over 1 second, and should produce visible chest rise. For intubated patients, provide continuous chest compressions while a second rescuer provides 8-10 rescue breaths per minute (1 breath about every 6 to 8 seconds). At the correct compression rate (100/min) and ventilation rate (10/min), it may be helpful to compress the chest 10 times for every rescue breath, without pausing compressions for rescue breaths.

*When do you check for a pulse?*

*When do you next analyze the patient’s rhythm?*

The AED now indicates “shock advised”. You deliver one shock.

*What do you do next?*

*How long do you attempt resuscitation if the patient’s pulse does not return?*

*Have you gathered all of the information required for the call-in report to the hotline?*

## RESQ TRIAL RESOURCE GUIDE

### Scenario 3: ACD-CPR + ITD (Pump and Pod, Yellow)

#### Objectives:

- Review patient inclusion/exclusion criteria for the ResQ Trial
- Apply and use the AED according to current AHA guidelines
- Avoid unnecessary interruptions or delays in chest compressions
- Demonstrate delivery of ACD-CPR using the ResQ Pump at the correct rate, depth, and decompression
- Demonstrate delivery of 1-second breaths at the appropriate rate with the ResQ POD during both BVM and Combi-tube (or ET tube) ventilations
- Understand the role of the ResQ POD as a circulatory enhancer, and the need to remove the ResQ POD as soon as a pulse returns (i.e. when CPR is discontinued)

You arrive on the scene and find the patient (50s male) lying on his living room floor. His wife states she heard a “thud” while doing laundry and came up to find him unresponsive. He complained of a headache earlier in the day. PMH: Hypertension. Meds: Hydopres for blood pressure.

*How have you made certain that you have the appropriate ResQ Trial CPR devices on scene?*

*Can the ResQ POD be used before a Combi-tube or ET tube is placed?*

*How do you know that you are delivering compressions at the correct rate? ...at the correct depth? Are you decompressing the chest effectively (creating a vacuum)? How can you tell?*

*While using a BVM + ResQ POD, how will you time your ventilations for this patient?*

**Note:** Be sure to hold a tight seal on the facemask at all times during chest compressions.

*When can your partner push the “analyze” button?*

During rhythm analysis, the patient vomits. The AED reports “no shock advised”.

*How should you prioritize the following tasks: suctioning the airway, Combi-tube, chest compressions?*

*Should you interrupt chest compressions to place the Combi-tube (or ET tube)?*

You successfully place the Combi-tube, and switch the ResQ POD from the facemask to the Combi-tube.

*Now how will you time ventilations for this patient? What if the timing lights fail to work?*

After completing approximately 2 more minutes of CPR, the patient has a HR 120, BP 100/68, but respirations are slow, shallow and irregular. You discontinue chest compressions, but continue rescue breathing.

*How often do you deliver these rescue breaths?*

*What do you do with the ResQ POD and why?*

*What would you do if the patient re-arrests (loses a pulse)?*

*Have you gathered all of the information required for the call-in report to the hotline (including the ResQ POD sticker)?*