pennsylvania
DEPARTMENT OF HEALTH

EMS Information Bulletin 2013-003

DATE: January 17, 2013

SUBJECT: Use of Mechanical CPR Devices by Basic Life Support Agencies

TO: EMS Agencies, Regional EMS Councils

FROM: Bureau of Emergency Medical Services
PA Department of Health
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BLS Use of Mechanical CPR Device

To use a mechanical Cardiopulmonary Resuscitation (CPR) device, a Basic Life Support (BLS) Emergency Medical Services (EMS) Agency must meet the criteria to be a High-Functioning Cardiac Arrest EMS agency and be approved by a regional EMS council.

Prerequisites:

- Licensed as a BLS transporting EMS agency.
- Participation with an Advanced Life Support (ALS) EMS agency in the Cardiac Arrest Registry to Enhance Survival (CARES) program (HTTPS://www.mycares.net).
- Submission of electronic National Emergency Medical Services Information system (NEMSIS) EMS elements through the responsible regional EMS council.
- Annual submission of NEMSIS demographic elements to the responsible Regional EMS Council.
- Support and approval by the EMS agency medical director.
- Quality Improvement review of all Out-of-Hospital Cardiac Arrest (OHCA) patient calls by the EMS agency medical director.
- Conduct ongoing High-Functioning CPR education program for at least 80% of the responding EMS Agency's providers.
- The EMS agency will agree to forward, to the responsible regional EMS council, a copy of quarterly QI reports documenting patient outcome for OHCA patients treated with a mechanical CPR device and patients treated with High-Functioning CPR.

Once the prerequisites have been met, a BLS service can apply through the responsible regional EMS council to implement use of a mechanical CPR Device.

Questions should be directed to the responsible regional EMS Council.

High-Functioning Cardiac Arrest EMS Agency
Agency Requirement Checklist

Primary Sudden Cardiac Arrest Statewide ALS Protocol (Optional) 3050-A

System Requirements:

☐ EMS agency medical director must approve participation and oversee education and QI of primary cardiac arrest care.

EMS Agency Medical Director Signature _____

☐ At least 80% of the responding EMS agency's personnel must have initial High Performance CPR (a.k.a. Pit Crew model) CPR Continuing Education. Training should include teamwork simulations integrating QRS, BLS, and ALS crew members who regularly work together. Attach roster of EMS Agency Providers identifying those who have completed BOTH of the following PA EMS CE courses:

1. High-functioning CPR Agency: Science of CPR (1.5 hrs.)
2. High-functioning CPR Agency: Pit Crew Resuscitation Simulations (1.5 hrs.)

☐ EMS agency must have a plan for regular ("shift change") pit crew CPR practice with simulation (low fidelity acceptable) available to crews at least monthly. Training should include teamwork simulations integrating QRS, BLS, and ALS crew members who regularly work together.

☐ The EMS agency, overseen by the agency medical director, must perform a QI review of care and outcome for every patient that receives CPR.

☐ QI must be coordinated with local receiving hospitals to identify and document percentage of patients that are discharged from hospital with good neurologic function. Participation in CARES (Cardiac Arrest Registry to Enhance Survival) may be used to document these outcomes.

☐ The QI must be coordinated with local PSAP/dispatch centers to review opportunities to assure optimal recognition of possible cardiac arrest cases and provision of dispatch-assisted CPR (including hands-only CPR when appropriate). The QI process must identify and document the percentage of cardiac arrest cases that are categorized as possible cardiac arrest at time of dispatch and the percentage of patients that receive bystander CPR. This information must be shared with the PSAP. Ideally, the QI process also documents the percentage of patients that receive dispatcher-assisted CPR, and works with the PSAP to improve the percentage of dispatch-assisted CPR in the community.

 High-functioning CPR EMS agency programs must be approved by the agency's local EMS regional council, and each agency must participate in the regional QI committee including submission of quarterly cardiac arrest QI summaries with information required by the Bureau of EMS.

EMS Agency Manager Approval:_____Date:_____

EMS Agency Medical Director Approval:_____Date:_____

Regional EMS Council Approval:_____Date:_____

High-Functioning CPR Pit Crew Team
On-the-Fly ("Shift Change") Refresher Checklist

Run drills on a regular basis (e.g. once weekly per shift)

Strongly Encouraged (Low Fidelity Equipment):

☐ CPR Torso/Head Manikin

☐ Oropharyngeal/Nasopharyngeal airways

☐ Bag-valve-mask

☐ Portable oxygen tank

☐ AED Trainer (should match the agency's AED)

☐ Stop watch

☐ Evaluation forms

Additional Equipment to Consider (When agency owns or has access to higher-fidelity equipment):

☐ ALS Manikin (with advanced airway and cardiac rhythm generator) or High-Fidelity Simulation Manikin

☐ Wave-form capnograph

☐ King LT/Combitube

☐ Impedance threshold device

☐ ALS manual monitor/defibrillator

☐ Heart rhythm generator

☐ IO simulation leg

☐ IV needles and tubing/IO needles and insertion device

☐ Expired medications

Cardiac Arrest Registry

Part A : Demographic Information

1 - Street Address (Where Arrest Occurred)

2 - City | 3 - State | 4 - Zip Code

5 - First Name | 6 - Last Name

7 - Age ☐ Days ☐ Months ☐ Years | 9 - Date of Birth | 10 - Gender ☐ Male ☐ Female | 11 - Race/Ethnicity ☐ American-Indian/Alaska ☐ Asian ☐ Black/African-American ☐ Hispanic/Latino ☐ Native Hawaiian/Pacific Islander ☐ White ☐ Unknown

12 - Medical history

☐ No ☐ Unknown ☐ Cancer ☐ Diabetes ☐ Heart Disease ☐ Hyperlipidemia
☐ Hypertension ☐ Renal Disease ☐ Respiratory Disease ☐ Stroke ☐ Other

Part B : Run Information

14 - Date of Arrest / / | 15 - Incident #

First Responding Agency

16 - Fire/First Responder | 17 - Destination Hospital

Part C: Arrest Information

18 - Location Type
☐ Home/Residence ☐ Healthcare Facility
☐ Public/Commercial Bldg ☐ Place of Recreation
☐ Street/Hwy ☐ Industrial Place
☐ Nursing Home ☐ Transport Center
☐ Other: Specify

19 - Arrest Witnessed
☐ Witnessed Arrest ☐ Unwitnessed Arrest

20 - Arrest After Arrival of 911 Responder
☐ Yes ☐ No

21 - Presumed Cardiac Arrest Etiology
☐ Presumed Cardiac Etiology
☐ Trauma
☐ Respiratory
☐ Drowning
☐ Electrocution
☐ Other

Resuscitation Information

22 - Resuscitation attempted by 911 Responder (or AED shock given prior to EMS arrival)
☐ Yes ☐ No

23 - Who Initiated CPR
☐ Not Applicable
☐ Lay Person
☐ Lay Person Family Member
☐ Lay Person Medical Provider
☐ First Responder (non-EMS)
☐ Responding EMS Personnel

24 - Type of Bystander CPR Provided
☐ Compressions and ventilations
☐ Compressions Only
☐ Ventilations Only

25 - Were Dispatcher CPR instructions provided:
☐ Yes ☐ No ☐ Unknown

26 - Was an AED applied prior to EMS arrival
☐ Yes, with defibrillation
☐ Yes, without defibrillation
☐ No

27 - Who First Applied the AED
☐ Lay Person
☐ Lay Person Family Member
☐ Lay Person Medical Provider
☐ First Responder (non-EMS)
If yes, was it applied by Police:
☐ Yes ☐ No

28 - Who First Defibrillated the Patient
☐ Not Applicable
☐ Lay Person
☐ Lay Person Family Member
☐ Lay Person Medical Provider
☐ First Responder (non-EMS)
If yes, did the Police defibrillate the patient:
☐ Yes ☐ No
☐ Responding EMS Personnel

29 - Did 911 Responder perform CPR:
☐ Yes ☐ No

First Cardiac Arrest Rhythm of Patient and ROSC Information

30 - First Arrest Rhythm of Patient
☐ Ventricular Fibrillation
☐ Ventricular Tachycardia
☐ Asystole
☐ Idioventricular/PEA
☐ Unknown Shockable Rhythm
☐ Unknown Unshockable Rhythm

31 - Sustained ROSC (20 consecutive minutes) or present at end of EMS Care
☐ Yes, but pulseless at end of EMS care(or ED arrival)
☐ Yes, pulse at end of EMS care (or ED arrival)
☐ No

32 - Was hypothermia care provided in the field
☐ Yes ☐ No

33 - End of Event
☐ Pronounced in the Field
☐ Pronounced in the ED
☐ Effort ceased due to DNR
☐ Ongoing Resuscitation in ED

34 - When did ROSC first occur:
☐ Never ☐ After EMS CPR Only ☐ Unknown
☐ After Bystander CPR Only ☐ After EMS Defib. shock
☐ After Bystander defib shock ☐ After ALS

35 - Estimated time of arrest : : (Hour Minute Second)

36 - Time of 1st defibrillatory shock : : (Hour Minute Second)

37 - Time of 1st CPR : : (Hour Minute Second)

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Part D: EMS Interventions (check all that apply)

38 - Mechanical CPR device used:
☐ Yes ☐ No
If 'Yes', please specify:
☐ Load-Distributing Band (AutoPulse)
☐ Active Compression Decompression (LUCAS Device) ™
☐ Mechanical Piston
☐ Other

41 - ITD used:
☐ Yes ☐ No
If 'Yes',select how:
☐ Bag valve mask ☐ Endotracheal tube ☐ Combitube
☐ King Airway ☐ LMA ☐ Oral/Nasal ET
☐ Other

43 - Vascular access:
☐ No IV ☐ IV ☐ IO

44 - 12 Lead:
☐ Yes ☐ No

39 - Automated CPR feedback device used:
☐ Yes ☐ No

40 - Advanced airway successfully placed in the field:
☐ Yes ☐ No
If 'Yes', please specify:
☐ Combitube ☐ King Airway ☐ LMA
☐ Oral/Nasal ET ☐ Other

42 - Were drugs administered:
☐ Yes ☐ No
If 'Yes',select drugs given:
☐ Epinephrine ☐ Atropine ☐ Amiodarone
☐ Bicarbonate ☐ Dextrose ☐ Lidocaine
☐ Vasopressin ☐ Other

45 - STEMI:
☐ Yes ☐ No ☐ Unknown
If 'Yes',select location:
☐ Anterior ☐ Inferior

Part E: Hospital Section

46 - ER Outcome
☐ Resuscitation terminated in ED
☐ Admitted to hospital
☐ Transferred to another acute care facility from the ED

47 - Was hypothermia care initiated or continued in the hospital
☐ Yes
☐ No

48 - Hospital Outcome
☐ Died in the hospital
☐ Discharged alive
☐ Patient made DNR
If yes, choose one of the following:
☐ Died in the hospital
☐ Discharged alive
☐ Transferred to another acute care hospital
☐ Not yet determined
☐ Transferred to another acute care hospital
☐ Not yet determined

49 - Discharge from the Hospital
☐ Home/Residence
☐ Rehabilitation Facility
☐ Skilled Nursing Facility/Hospice

50 - Neurological Outcome At Discharge From Hospital
☐ Good Cerebral Performance (CPC 1)
☐ Moderate Cerebral Disability (CPC 2)
☐ Severe Cerebral Disability (CPC 3)
☐ Coma, Vegetative State (CPC 4)

51 - Was the final diagnosis acute myocardial infarction: ☐ Yes ☐ No

Hospital Procedures

52 - Coronary Angiography Performed: ☐ Yes ☐ No ☐ Unknown
If 'Yes', provide date and time:
☐☐ / ☐☐ / ☐☐ ☐☐ : ☐☐
Hour Minute

53 - Was a cardiac stent placed: ☐ Yes ☐ No ☐ Unknown
54 - CABG performed: ☐ Yes ☐ No ☐ Unknown
55 - Was an ICD placed and/or scheduled: ☐ Yes ☐ No ☐ Unknown

Response and Treatment Times

	Hour	Minute	Second
57 - Time call received at dispatch center	☐☐	☐☐	☐☐
58 - Time First Responder dispatched	☐☐	☐☐	☐☐
59 - Time of First Reponsder en route	☐☐	☐☐	☐☐
60 - Time Ambulance dispatched	☐☐	☐☐	☐☐
61 - Time for Ambulance en route	☐☐	☐☐	☐☐
62 - Time First Responder arrived at scene	☐☐	☐☐	☐☐
63 - Time Ambulance arrived at scene	☐☐	☐☐	☐☐
64 - Time EMS arrived at patient side	☐☐	☐☐	☐☐
65 - Time Ambulance left scene	☐☐	☐☐	☐☐
66 - Time Ambulance arrived at ED	☐☐	☐☐	☐☐

☐ 56 - No First Responder dispatched

General Comments