

# Appendix O

## Example of Outpatient Cardiac Rehabilitation Emergency Standing Orders\*

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Protocols for Emergencies in the Cardiac Rehabilitation Area

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### I. Cardiopulmonary Arrest/Code 99

- A. Identify unresponsiveness and determine if breathing is absent or abnormal (gaspings).
- B. Call out for help/call a code/activate emergency medical system (EMS).
  - 1. Call out for help from coworker. If no one responds and if no other staff member is available to assist, go to the nearest phone and dial code number or EMS. (Emergency numbers with specific scripted instructions are posted at each phone.) Get defibrillator/automated external defibrillator (AED). If no pulse, attach defibrillator/AED and shock if indicated. Begin cardiopulmonary resuscitation (CPR) with compressions.
  - 2. If a second responder is available to assist, that person should go to the nearest phone and dial code number or EMS and then

get the defibrillator/AED while the first responder stays with the patient to start compressions until the defibrillator/AED is available.

- 3. When the call is answered, state “Code 99.”
- 4. Identify the area or room the patient is in. Do not hang up until the operator repeats the information to verify location.
- 5. The operator will announce “Code 99” and the location over the intercom system.
- 6. The assigned code team will proceed immediately to that area.
- 7. The operator will then call 911 to initiate notification of EMS for assistance and transport.
- 8. Operator will notify EMS which entrance to use.
- 9. The operator will page the group Code 99 number so that 99 appears on the code team pagers. The code team personnel will call the operator for location information (if the overhead page is not heard).
- 10. The operator will also call the hospital emergency department and notify the charge nurse of the Code 99 situation and impending transfer of the patient.
- 11. A runner from the communication center will be dispatched to the appropriate entrance to direct the EMS team to the Code 99 area.

### First Responder

- 1. Determine unresponsiveness and absent or abnormal breathing.

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From *Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs, Fifth Edition*, by American Association of Cardiovascular and Pulmonary Rehabilitation, 2013, Human Kinetics, Champaign, IL.

2. Send someone to call a code and get defibrillator/AED.
3. If pulseless, begin chest compressions until defibrillator/AED arrives. Push hard, push fast at a depth of at least 2 inches and a rate of at least 100 per minute, using a compression to ventilation ratio of 30:2. Allow for complete chest recoil, minimize interruptions to <10 seconds, and avoid excessive ventilation.

### **Second Responder**

1. After calling a code, take crash cart with defibrillator/AED to the patient. (See “Emergency on Track” or “Emergency in Locker Room” for these areas.)
2. Place defibrillator pads on patient and assess cardiac rhythm or place on AED.
3. Shock if indicated, resume compressions. Follow appropriate algorithm according to ACLS guidelines.

### **Third Responder if available**

1. Direct remaining patients to another area and dismiss class.
2. Direct and control incoming emergency response team and patients.
3. Obtain extra supplies and equipment as needed.
4. Act as the recorder of events until the code team arrives.
5. Prepare records to be sent with patient to the emergency department (ED) if needed.
6. Notify patient physician/cardiologist and family.

### **Emergency on Track**

1. First responder will remove the backpack, defibrillator, and portable suction from the crash cart and take them to the track.
2. Initiate standard Code 99 procedure.

### **Emergency in Locker Rooms**

1. Remove patient from locker room to a dry area when appropriate.
2. Appropriately dry patient with bath towels or blanket.
3. Initiate standard Code 99 procedure.

## **II. Chest Pain**

- A. If a patient develops chest pain while in the exercise area, the patient should immediately discontinue exercise and sit or lie down. Note the exercise workloads and rate–pressure product at which the symptoms occurred.
- B. The following protocol should be followed by the cardiac rehabilitation staff:
  1. Check pulse, blood pressure, cardiac rhythm (attach telemetry monitor if not already monitored), and oxygen saturation.
  2. Rate angina on a scale of 1 to 10.
  3. If no relief with 1 to 3 minutes of rest, give 1 nitroglycerine (NTG) 0.4 mg SL or spray.
  4. Obtain 12-lead ECG and call supervising physician.
- C. If pain is relieved:
  1. If this angina is of new onset, the patient should be evaluated by the supervising physician. The patient primary physician should be notified of the results of the evaluation and recommended treatment, if any.
  2. If the patient experiences chronic stable angina, he or she will stop exercising until the angina is relieved. Patient may resume the exercise at a lower workload dependent on the clinical judgment of the professional staff. This patient should be observed closely for recurrent angina.

OR

The patient may be sent home and instructed to report any increase in frequency or severity of angina episodes to primary physician.
- D. If pain is not relieved:
  1. Monitor pulse, blood pressure, cardiac rhythm, and oxygen saturation closely.
  2. Place on oxygen at 2 to 4 L per nasal prongs if oxygen saturation  $\leq 94\%$ .
  3. Patient to chew aspirin 160 to 325 mg.
  4. Repeat NTG 0.4 mg SL or spray every 5 minutes for unrelieved angina symptoms.

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5. The supervising physician will evaluate and consult with primary physician to determine the course of action or transfer patient to the ED, cath lab, or coronary care unit (CCU) for evaluation and treatment.
6. Establish IV access.

### III. Hypoglycemia

- A.** Be alert to signs and symptoms of hypoglycemia, which may include:
  1. Headache, weakness, diaphoresis, nervousness, and shakiness
  2. Faintness, numbness, tingling of tongue and lips, blurred or double vision, and unsteady gait
  3. Tachycardia, pallor, or chilling
  4. Confusion, aggressive or erratic behavior
  5. Convulsions or unconsciousness
- B.** If patient displays any of these symptoms:
  1. Obtain finger-stick blood glucose level.
  2. If blood glucose results are below 70 mg/dL, or if patient remains symptomatic, give 15 g carbohydrate (CHO), juice, or three glucose tablets.
  3. Retest blood glucose in 15 minutes. If blood glucose is not >90 mg/dL, repeat 15 g CHO and recheck blood glucose in 15 minutes.
  4. If patient is uncooperative or unconscious, call supervising physician, give glucose gel, or establish intravenous (IV) access, and give 50 cc (1 amp) 50% dextrose solution IV. Arrange for transport to ED.

### IV. Hyperglycemia

- A.** A participant with a blood sugar greater than 300 mg/dL may not exercise. In situations in which patient's referring physician and rehabilitation medical director have given their permission, this policy may be superseded.
- B.** Participants who have demonstrated reliable home blood sugar evaluations will have

occasional blood sugar evaluations by the professional staff.

- C.** Participants who are found to be unreliable with home blood sugar evaluations will need their blood sugar levels evaluated more frequently by the rehabilitation staff.
- D.** The cardiac rehabilitation staff may request a blood sugar evaluation on any patient based on suspected signs and symptoms of hyperglycemia (nausea, flushing, polyuria, polydipsia, fruity breath, tachypnea).

### V. Hypotension

- A.** Remove the patient from the exercise area if possible.
- B.** Place patient in a supine position. May elevate legs or place in Trendelenberg position.
- C.** Attach a telemetry monitor if not already monitored.
- D.** Check blood pressure, pulse, cardiac rhythm, and oxygen saturation.
- E.** If no response to position change (SBP remains <90 mmHg and/or patient remains symptomatic), call supervising physician. If the patient condition continues to deteriorate or becomes progressively symptomatic, or if BP continues to drop, start an IV of normal saline NS at 100 mL/hour and call the supervising physician. After evaluation and treatment of the patient, the supervising physician should notify the patient's primary physician of the hypotensive episode and discuss any further treatment if necessary.
- F.** If patient does respond to the supine position, keep supine until BP is greater than 100 systolic, then gradually assist to sitting position. Continue to carefully monitor BP, pulse, and rhythm. Encourage fluids. Notify the patient's primary physician of the episode.

### VI. Hypertension

- A.** Check every patient's blood pressure before exercise and compare with previous recordings.

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- B.** If the systolic reading is greater than 170 mmHg or the diastolic reading is greater than 100 mmHg, have the patient sit and recheck the blood pressure in 5 minutes.
- C.** If the blood pressure remains elevated, do not have patient exercise. May notify primary care physician or call supervising physician to evaluate and/or refer the patient to his or her physician when appropriate.
- D.** Investigate whether patient is complying with taking medications, following diet, sodium restriction, and so on.

## VII. Dysrhythmias

### Premature Ventricular Contractions (PVCs)

- A.** Observe for the following:
  - 1. Frequency
  - 2. Whether multifocal or unifocal
  - 3. Pairs or runs, sustained, or paroxysmal
  - 4. Associated signs or symptoms
  - 5. Palpate pulse to evaluate for peripheral perfusion
- B.** Document any new arrhythmias or increase in severity with a rhythm strip and make notation on chart. Notify supervising physician or referring physician or both, where appropriate, to discuss treatment.
- C.** Decrease workloads for frequent single PVCs (>10 minutes) and discontinue exercise if PVCs are a new event, or if they develop into bigeminy or pairs, or if the patient becomes symptomatic. Contact patient referring physician regarding new PVCs or a change in the severity of PVCs.
- D.** If the patient condition deteriorates and becomes symptomatic, check pulse, BP, oxygen saturation, and notify supervising physician, place oxygen at 2 to 4 L/NP, establish IV access.
- E.** Chronic asymptomatic PVCs:
  - 1. If patient primary physician has been consulted to evaluate PVCs, and if it is determined that patient is benign, the patient may continue to exercise unless he or she becomes symptomatic.
  - 2. Continue to document arrhythmias and closely observe for any developing signs and symptoms.

### Bradycardia

- A.** If patient develops symptomatic bradycardia, stop exercise.
- B.** Monitor heart rate and rhythm, BP, and oximetry. Oxygen at 2 to 4 L for oxygen sats <94%. Get 12-lead ECG if available.
- C.** Assess for symptoms of instability or altered mental status, ischemic chest discomfort, heart failure, or hypotension. If present, notify supervising physician, obtain IV access, and prepare to administer atropine 0.5 mg IV bolus every 3 to 5 minutes to a maximum of 3 mg and transfer of patient to ED. May utilize external pacing if available.

### Tachycardia

- A.** If patient develops a new wide or narrow complex tachycardia, stop exercise.
- B.** Monitor heart rate and rhythm, BP, and oximetry. Oxygen at 2 to 4 L for oxygen sats <94%. Get 12-lead ECG if available to determine type of tachycardia.
- C.** Assess for symptoms of instability or altered mental status, ischemic chest discomfort, heart failure, or hypotension. If present, notify supervising physician, obtain IV access, and prepare for synchronized cardioversion. If stable, may utilize vagal maneuvers or antiarrhythmic agents per advanced cardiac life support tachycardia algorithm.
- D.** Prepare for transfer to ED.

## VIII. Dyspnea

- A.** If patient develops acute dyspnea, stop exercise and have patient sit down.
- B.** Monitor heart rate and rhythm, BP, respiratory rate, lung sounds, and oximetry. Oxygen at 2 to 4 L for oxygen sats <94%.
- C.** If patient has a metered dose inhaler, it may be administered as prescribed.
- D.** If condition deteriorates, notify supervising physician to evaluate for treatment options and possible transfer to ED.

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- E. If condition improves, notify primary physician for further recommendations.

## IX. Placement of Intravenous Line

Purpose: To provide immediate access to administer emergency medication and intravenous fluids.

- A. An attempt will be made to notify the supervising physician.
- B. Place a saline lock in participant when one or more of the following apply:
  1. Chest pain protocol has been followed and chest pain persists.
  2. ECG, vital signs, or participant appears to be clinically unstable or symptomatic.
  3. Physician directs the placement of IV line.

## X. Patient Transportation

The cardiac rehabilitation program has contracted with ambulance service to provide emergency transportation to the hospital. Their personnel include trained medical technicians. The ambulance service phone number is posted at each phone extension.

- A. Ambulance emergency transportation: Notify ambulance service personnel as above and instruct them to use the front entrance at the facility address.
- B. Nonemergency transportation: In the event the patient is stable but needs transportation

to the hospital for a procedure or nonemergent admission, the program shuttle van will be used. A nurse from the cardiac rehabilitation area will accompany the patient to the hospital to ensure safety.

- C. The physician will be called before transfer to see which method of transportation is required. Document physician decision (if it is to transfer in shuttle van). Cardiac rehabilitation nursing personnel will document patient condition before, during, and at the time of transfer to the hospital.

## Cardiac Rehabilitation Department Emergency Procedures and Standing Orders Were Reviewed and Approved

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Physician's name

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Signature

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Date of most recent review

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