

Medical Outcomes after Cardiac Arrest (MOCA) Chart Review Ottawa (Final verion Jul 05)

ADMINISTRATIVE

_____ Reviewer's Initials:

___/___/____ Form Date (mm/dd/yyyy)

_____ Center Number 01 Seattle 02 King County 03 Ottawa

_____ Study Number

_____ Patient Age (years)

___/___/____ DOB (mm/dd/yyyy)

_____ Sex: **1** Male **2** Female

_____ Race: **1** Caucasian **2** African American **3** Native American **4** Asian **8** Other **9** Unknown

___/___/____ Date of Cardiac Arrest (mm/dd/yyyy)

_____ Name of admitting hospital

_____ ID No. of admitting hospital

_____ Type of admitting hospital 1- University/Academic 2- Community/Private 3- Public

_____ Name of transfer hospital

_____ ID No. of transfer hospital

_____ Type of transfer hospital 1- University/Academic 2- Community/Private 3- Public

___/___/____ Date of Transfer (mm/dd/yyyy)

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SECTION 1: THE CARDIAC ARREST

Code each below as : **1 Yes (definite/presumed present)**
 2 No (stated to be absent or not mentioned)
 3 Stated to be questionable
 9 Unknown

Did the patient experience any acute signs and symptoms during the hour prior to the cardiac arrest?

- _____ 1.1 Myocardial ischemia discomfort (chest discomfort only, with or without radiation)
- _____ 1.2 Acute concurrent illness (pneumonia, dialysis, CHF, etc) Type? _____
- _____ 1.3 Other; Explain: _____(nausea, SOB, diaphoresis, weakness, lightheadedness, dizziness)

SECTION 2. PATIENT DEMOGRAPHIC CHARACTERISTICS

- _____ 2.2 Educational status (highest level completed)
1- < high school 2-highschool 3-some college/vocational school 4- college grad 5- graduate school
9- Unknown
- _____ 2.3 Employment
1 – employed 2 - unemployed 3 – retired (put retired if patient had retired prior to cardiac arrest)
9- unknown
- _____ 2.3 Occupation

SECTION 3: ECG DATA (PLEASE COPY AND REMOVE PATIENT NAME AND ATTACH TO THIS FORM)

- ___/___/___ :___ 3.1 Date (mm/dd/yyyy)/Time (24-hour time) of 1st ECG
- ___/___/___ :___ 3.2 Date and Time of 2nd ECG
- ___/___/___ :___ 3.3 Date and Time of 3rd ECG
- ___/___/___ :___ 3.4 Date and Time of 4th ECG

SECTION 4: ADMISSION BLOOD RESULTS

Troponin Level

- _____ 4.1 Which Troponin level was drawn: **1 Troponin I 2 Troponin T 9 Unknown**
- _____ 4.2 Normal Troponin range for the hospital
- ___/___/___ :___ 4.3a Date and Time of 1st Troponin level
- _____ 4.3b 1st Troponin level
- ___/___/___ :___ 4.4a Date and Time of 2nd Troponin I
- _____ 4.4b 2nd Troponin level
- ___/___/___ :___ 4.5a Date and Time of 3rd Troponin level

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_____ 4.5b 3rd Troponin level

_____ 4.6 Based on the physician assessment, were any of the above ECG and enzyme levels interpreted by the attending physician as being indicative of myocardial damage consistent with a STEMI?

1 Yes 2 No 3 Unknown

_____ 4.7 Based on the physician assessment, were any of the above ECG and enzyme levels interpreted by the attending physician as being indicative of myocardial damage consistent with a non-STEMI?

1 Yes 2 No 3 Unknown

Other Admission Blood Results (list the first drawn on chemistries and hematology, even if different)

____/____/____ (mm/dd/yyyy) ____:____(24-hour) 4.8 Date/Time Obtained

- | | |
|---|-------------------------------------|
| _____ mmol/L | 4.9 Sodium (Na+) |
| _____ mmol/L | 4.10 Potassium (K+) |
| _____ mmol/L | 4.11 Bicarbonate(HCO ₃) |
| _____ mg/dL | 4.12 Magnesium (Mg) |
| _____ mg/dL | 4.13 Urea (BUN) |
| _____ mg/dL | 4.14 Creatinine |
| _____ g/dL | 4.15 Hemoglobin |
| _____ 10 to the power 9/L x10 ⁻³ | 4.16 WBC |
| _____ 10 to the power 9/L x10 ⁻⁹ | 4.17 Platelets |
| _____ mg/dL | 4.18 Glucose |

SECTION 5: MEDICATIONS ON ADMISSION

Please indicate the following for each:

- | | | |
|-------|------|--|
| 1 Yes | 2 No | 5.1 ASA |
| 1 Yes | 2 No | 5.2 ACE-1/Angiotensin II receptor antagonist |
| 1 Yes | 2 No | 5.3 Amiodarone |
| 1 Yes | 2 No | 5.4 Beta blocker |
| 1 Yes | 2 No | 5.5 Clopidogrel |
| 1 Yes | 2 No | 5.6 Coumadin |
| 1 Yes | 2 No | 5.7 Digoxin |

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1 Yes 2 No 5.8 Statin

1 Yes 2 No 5.9 Other Anti-Arrhythmic Specify: _____

SECTION 5B:

Was patient transferred to another acute care hospital for further investigation or management?

1 Yes 2 No

If answer is YES please complete remaining sections of the form as best you can with information you have. State name and address of hospital transferred to:

SECTION 6: CARDIAC INVESTIGATIONS: Did the patient undergo the following?

Please code for each investigation: 1 Yes 2 No 3 Unknown

_____ 6.1 Trans-thoracic Echo: 1 Yes 2 No 3 Unknown

_____% 6.2 Left Ventricular Ejection Fraction (OR)

_____ 6.3 Left Ventricular dysfunction: Coded as: 1 None 2 Mild 3 Moderate 4 Severe

___/___/___ 6.3a Date (mm/dd/yyyy)

_____ 6.4 Trans-esophageal Echo 1 Yes 2 No 3 Unknown

_____% 6.5 Left Ventricular Ejection Fraction (OR)

_____ 6.6 Left Ventricular dysfunction: Coded as: 1 None 2 Mild 3 Moderate 4 Severe

___/___/___ 6.6a Date (mm/dd/yyyy)

_____ 6.7 MUGA 1 Yes 2 No 3 Unknown

_____% 6.8 Left Ventricular Ejection Fraction (OR)

_____ 6.9 Left Ventricular dysfunction: Coded as: 1 None 2 Mild 3 Moderate 4 Severe

___/___/___ 6.9a Date

_____ 6.10 Exercise Treadmill 1 Yes 2 No 3 Unknown

_____ 6.11 Results (based on report from treadmill): 1 positive 2 negative 3 unclear

___/___/___ 6.11a Date

_____ 6.12 Perfusion study 1 Yes 2 No 3 Unknown

_____ 6.13 Results (based on report from treadmill): 1 positive 2 negative 3 unclear

___/___/___ 6.13a Date

_____ 6.14 Coronary Angiogram (**please copy the report and remove patient name and attach to this form**): 1 Yes 2 No 3 Unknown

_____% 6.14a Left Ventricular Ejection Fraction

___/___/___ 6.14b Date

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Specific coronary angiogram results

Please record result for each

0 < 50% stenosis
1 50 – 70% stenosis
2 71 – 90% stenosis
3 91 – 99% stenosis
4 Occluded
5 Not recorded

___ 6.15a Left Main
 ___ 6.15b Left Anterior Descending
 ___ 6.15c Left Circumflex
 ___ 6.15d Right Coronary Artery
 ___ 6.15e Saphenous vein graft 1
 ___ 6.15f Saphenous vein graft 2
 ___ 6.15g Saphenous vein graft 3
 ___ 6.15h Left internal mammary
 ___ 6.15i Other

___ 6.16 Electrophysiology study **1 Yes** **2 No** **3 Unknown**
 ___ 6.17 Results: **1 positive** **2 negative** **3 unclear**

___/___/___ 6.17a Date

SECTION 7: CARDIAC INTERVENTIONS: Did the patient undergo any of these procedures?

Code for each intervention:	1 Yes	2 No	3. Unknown
___ 7.1 Coronary Artery Bypass Grafting	1 Yes	2 No	3 Unknown
___/___/___ 7.1a Date			
___ 7.2 Percutaneous coronary revascularization	1 Yes	2 No	3 Unknown
___/___/___ 7.2c Date			
___ 7.3 Pacemaker	1 Yes	2 No	3 Unknown
___/___/___ 7.3a Date (mm/dd/yyyy)			
___ 7.4 Implantable Cardioverter Defibrillator	1 Yes	2 No	3 Unknown
___ 7.4a ICD (single or dual chamber) OR	1 Yes	2 No	3 Unknown
___ 7.4b ICD with cardiac resynchronization/biventricular pacing	1 Yes	2 No	3 Unknown
___/___/___ 7.4c Date (mm/dd/yyyy)			

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SECTION 8: PHYSICIAN DIAGNOSIS FOR UNDERLYING ETIOLOGY/EXPLANATION FOR CARDIAC ARREST: (may be a YES for more than one)

- | Code for each: | | 1 Yes | 2 No |
|----------------|------|-------|--|
| 1 Yes | 2 No | 8.1 | Acute ST elevation STEMI |
| 1 Yes | 2 No | 8.2 | Acute Non-STEMI |
| 1 Yes | 2 No | 8.3 | MI unspecified |
| 1 Yes | 2 No | 8.4 | Acute Myocardial Ischemia/unstable angina <i>without</i> MI |
| 1 Yes | 2 No | 8.5 | Ventricular Arrhythmia due to poor LV function/ LV scarring/Cardiomyopathy |
| 1 Yes | 2 No | 8.6 | Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) |
| 1 Yes | 2 No | 8.7 | Hypertrophic Obstructive Cardiomyopathy |
| 1 Yes | 2 No | 8.8 | Congenital Long QT Syndrome |
| 1 Yes | 2 No | 8.9 | Electrolyte Imbalance |
| 1 Yes | 2 No | 8.10 | Substance Abuse |
| 1 Yes | 2 No | 8.11 | Wolf-Parkinson-White (WPW) |
| 1 Yes | 2 No | 8.12 | Idiopathic |
| 1 Yes | 2 No | 8.13 | Others – Please specify: _____ |

SECTION 9: PATIENT CONTACT: Please code each question with the appropriate number.

- | | 1 Yes | 2 No | 3 Unknown | |
|-------|-------------------------|--------------|-------------------------------------|--|
| _____ | | | | 9.1 Was the patient's case ever discussed with a Cardiologist? |
| _____ | | | | 9.2 Was the patient's case ever discussed with an Electrophysiologist? |
| _____ | | | | 9.3 Was the patient seen by a Cardiologist? |
| _____ | | | | 9.4 Was the patient seen by an Electrophysiologist? |
| _____ | | | | 9.5 What type of attending physician was the primary treating doctor? |
| | 1- Family practice (GP) | 2- Internist | 3-Cardiologist without EP specialty | 4- EP specialist |

List names of all of doctors in 9.1-9.5

SECTION 10: CONDITIONS AT FINAL MEDICAL DISCHARGE

Code each below as : 1 Yes (definite/presumed present)
 2 No (stated to be absent or not mentioned)
 3 Stated to be questionable
 9 Unknown

- ___ 10.1 Heart Failure If yes, New York Heart Association Class (1-4): _____
- ___ 10.2 Terminal cancer (< 6 months life expectancy)
- ___ 10.3 Severe lung disease (requiring home oxygen)
- ___ 10.4 Peripheral vascular disease (previous amputation, claudication, or prior surgery)
- ___ 10.5 Renal failure on dialysis
- ___ 10.6 Significant current psychiatric condition. Specify diagnosis _____
- ___ 10.7 Significant substance abuse If yes, specify: _____
- ___ 10.8 Disabling stroke
- ___ 10.9 Other disabling neurological condition (i.e. dementia, Parkinsons): Specify _____
- ___ 10.10 Other significant comorbid illness: Specify _____
- ___ 10.11 Was the patient DNAR status (at final discharge)?

SECTION 11: IMPLANTABLE CARDIOVERTER DEFIBRILLATOR STATUS

Code each as: 1 Yes 2 No 3 Unknown

- ___ 11.1 Did the patient have an ICD prior to cardiac arrest event
- ___ 11.2 Did the patient receive an ICD during this hospitalization?
- ___ / ___ / ___ 11.3 Date of ICD implant (mm/dd/yyyy)
 If the answer to 11.2 is YES, proceed to 12.1
 If the answer to 11.2 is NO, proceed to 11.4
- ___ 11.4 Did the attending physician discuss an ICD with the patient?
 If the answer is YES, proceed to 11.5
 If the answer to 11.2 is NO, proceed to 11.6
- ___ 11.5 Did the attending physician recommend/offer an ICD to the patient?
 If the answer is YES, proceed to 11.7
 If the answer is NO, proceed to 11.6

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11.6 What were the reason/reasons that the attending physician recorded *not* offering an implantable defibrillator (ICD) to the patient? (**May be more than one reason or no reason, code as 1 Yes 2 No 3 Unknown**)

- _____ A. Cardiac arrest was in the setting of an acute STEMI
- _____ B. Cardiac arrest was in the setting of acute non-STEMI
- _____ C. MI unspecified
- _____ D. Cardiac arrest was in the setting of cardiac ischemia without MI (unstable angina).
- _____ E. Cardiac arrest was related to hypokalemia or hyperkalemia.
- _____ F. Cardiac arrest was clearly related to another reversible cause. **Specify cause:** _____
- _____ G. The patient had significant co-morbid illness. **Specify illness:** _____
- _____ H. The patient had significant neurological or functional impairment.
- _____ I. Patient's older age
- _____ J. Concern about the patient's psychological condition/ability to cope with an ICD.
- _____ K. Insufficient evidence to support ICD therapy in this patient.
- _____ L. Cost issues
- _____ M. No mention of ICD as an option. (**if ICD not mentioned, proceed to 12.1**)
- _____ N. Other **Specify:** _____

11.7 Why did the patient choose *not* to have an ICD? (**May be more than one reason or no reason, code as 1 Yes 2 No 3 Unknown**)

- _____ A. Patient did not want to have procedure. **Specify:** _____
- _____ B. Patient has concerns about potential adverse side effects from the ICD (shocks, infection, "foreign" internal device) **Specify:** _____
- _____ C. The patient was concerned about their driving license or other limitation. **Specify:** _____
- _____ D. Family preference/influence **Specify:** _____
- _____ E. Patient did not want to have to travel to have the ICD implanted.
- _____ F. The patient did not want to travel to the ICD clinic for check-ups.
- _____ G. The patient declined for other reasons **Specify:** _____

SECTION 12: NEUROLOGICAL RECOVERY

_____ 12.1 Please state the neurologic morbidity at final discharge: (Note Codes 1-4 are same as Cerebral Performance Category Score)

- 1 Apparent full neurologic recovery with "normal" brain function. May have minor memory deficits, generalized weakness.
- 2 Mildly impaired neurologic status. (e.g. patient may have major memory loss, naming difficulty, coordination deficits). May need assistance with activities of daily living (ADLs) Code 2 may also be defined as "status as between codes 1 and 3".
- 3 Awake with severely impaired neurologic status. May be without language or may require chronic support because of inability to reason or to follow instructions.
- 4 Patient comatose, vegetative, and non-responsive.
- 5 Disabled, severity unknown
- 6 Cannot tell from record, presume patient is neurological status 1 or 2. Explain: _____
- 7 Cannot tell from record, presume patient is not neurological status 2. Explain: _____
- 9 unknown

SECTION 13: DISCHARGE DATA (Final discharge, not discharged for transfer)

_____ 13.1 Discharge Location

- 1 Home
- 2 Chronic Care Facility/ Nursing Home
- 3 Rehabilitation Facility
- 4 Acute Care Facility
- 5 Other Specify: _____

13.2 Enter the Primary and up to 5 Secondary ICD 9 or 10 codes if they are already coded, otherwise leave blank. If there is a leading character, enter it first in the character column (char.) If not, leave column blank.

Primary Discharge Code		
Char.	Numeric Code	ICD – 9 OR 10 (PLEASE STATE)

_____	_____	_____
-------	-------	-------

Secondary Discharge Codes		
Char.	Numeric Code	ICD – 9 OR 10 (PLEASE STATE)

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

SECTION 14: THERAPY AT DISCHARGE

14.1 Code for each: 1 Yes 2 No

- 1 Yes 2 No 14.1a ASA
- 1 Yes 2 No 14.1b ACE-I/Angiotensin II receptor antagonist
- 1 Yes 2 No 14.1c Amiodarone
- 1 Yes 2 No 14.1d Beta blocker
- 1 Yes 2 No 14.1e Clopidogrel
- 1 Yes 2 No 14.1f Coumadin
- 1 Yes 2 No 14.1g Digoxin
- 1 Yes 2 No 14.1h Statin
- 1 Yes 2 No 14.1i Other Anti-Arrhythmic

Specify: _____

14.2 Was the patient provided with (a prescription for) an automated external defibrillator?

1 Yes 2 No