



Resuscitation Centers of Excellence: Designation Process

Rev January 2010

The Path to Improved Outcomes from Sudden Cardiac Arrest in the Austin/Travis County Area

The concept of regionalized and specialized centers for specific patient types continues to gain support and is becoming a more common approach within the US. Similar to trauma centers, there is growing evidence that specialized centers who use standard treatment processes based on current evidence and who routinely see specific patients tend to produce more favorable patient outcomes. With this in mind, there is a need for designated Resuscitation Centers as another component of our community's approach to improving survival from sudden cardiac arrest. In the Austin/Travis County area, we believe the proportion of post cardiac arrest patients who are discharged neurologically intact from the hospital can be dramatically affected when these specific capabilities and processes are in place. The Texas Medical Board rules for Off-Line EMS Medical Directors (Texas Administrative Code 197.3) specifically requires the Medical Director to establish criteria for selection of a patient's destination. As a result, the Austin/Travis County Office of the Medical Director will utilize the following criteria and processes for hospitals wishing to be designated as a receiving center for Post Cardiac Arrest patients with return of spontaneous circulation (ROSC) (Note: excludes trauma patients).

The concept of a Resuscitation Center of Excellence parallels that of the Trauma System development which occurred over the past several years. The concept uses a team approach involving multiple key players, both in-hospital and out-of-hospital. We recognize the value of coordination between the EMS System, the ED staff, Interventional Cardiology, the CCU/ICU staff, Electrophysiology, and Hospital Administration. In terms of cardiac arrest, the Resuscitation Center of Excellence concept emphasizes early use of proven interventions for resuscitation and post-resuscitation care.

This document describes the process utilized by the City of Austin/Travis County EMS System Office of the Medical Director to designate hospitals who will receive post cardiac arrest patients from the EMS System. This simple and straightforward process focuses on the efficacy of hospital processes as well as the ability to provide data demonstrating effective, ongoing performance.

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The key components of the process are:

1. commitment to seeking this designation
2. demonstrated process and capabilities for 24/7 therapeutic hypothermia
3. demonstrated process and capabilities for 24/7 selection of patients with a suspected acute myocardial infarction prior to cardiac arrest and provision of percutaneous coronary intervention to these patients
4. demonstrated process and capabilities for continued post resuscitation care and risk reduction
5. commitment to coordinate with the EMS System to exchange data for the purposes of quality improvement

Adult post cardiac arrest patients with return of spontaneous circulation (ROSC) transported by the Austin/Travis County EMS System are preferentially transported to hospitals designated as a Resuscitation Center of Excellence.

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Process Criteria Overview

In order to be eligible to apply for Resuscitation Center of Excellence designation, the hospital must meet two essential criteria:

1. Currently designated by the Austin/Travis County EMS System to receive EMS transported patients
2. Currently designated to receive Delta and Echo STEMI patients. As local or regional STEMI Receiving Center designation criteria are defined, the hospital seeking to become a Resuscitation Center of Excellence will demonstrate the ability to meet these STEMI Receiving Center criteria.

The following describes the general Resuscitation Center designation process for hospitals who meet the two essential criteria above. Specific criteria are described in the following sections of this document.

1. Submit to the Office of the Medical Director process documentation along with a letter of interest regarding designation as a Resuscitation Center of Excellence
 - a. A hospital may withdraw its request or designation at any time.
 - b. A hospital may submit a letter of interest at any time
2. Provide documentation of the hospital's processes for ensuring:
 - a. patients receive continued therapeutic hypothermia with minimal risk of rewarming
 - b. patients with evidence of an acute myocardial infarction, including those presenting with VF/VT, leading to cardiac arrest receive early PCI
 - c. implanted cardioverter-defibrillators are placed in patients with a potential benefit from the ICD
 - d. patients with increased cardiovascular risk factors receive risk reduction therapies and/or education & training
 - e. grief and/or organ donation services are available
3. Provide documentation of the hospital's plan for:
 - a. Tracking and evaluating performance related to Resuscitation Center of Excellence criteria
 - b. Identifying the person(s) designated as responsible for coordination of the Resuscitation of Excellence process
 - c. Collecting performance and outcome data for post cardiac arrest patients in coordination with the Office of the Medical Director and the EMS System
 - d. Utilizing the performance and outcome data to identify potential improvements

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Detailed Process Criteria

The following elements and explanations are provided to assist hospitals seeking designation as a Resuscitation Center of Excellence by the Austin/Travis County Office of the Medical Director. Descriptions of how the Center meets these requirements should be in the form of short explanations preferably accompanied by simple process flow diagrams or internal procedures. Lengthy and detailed documents are not required or expected.

Commitment to Initial Post Resuscitation Care

1. The Center has effective processes in place that demonstrate its commitment to providing post resuscitation therapeutic hypothermia for patients with return of spontaneous circulation. The Center may demonstrate this best by describing the:
 - a. process used to mobilize therapeutic hypothermia equipment and staff
 - b. capabilities(equipment and staff) available for providing therapeutic hypothermia
 - c. process by which the risk of premature or rapid rewarming will be minimized as the patient progresses through the ED, Cath lab, and ICU
 - d. process by which Emergency Department physician and nursing staff will be informed of these therapeutic hypothermia processes
 - e. process for documenting the specific reason(s) for not initiating or for discontinuing therapeutic hypothermia
 - f. process used to notify Austin/Travis County EMS Communications when these capabilities are not available (e.g. all hypothermia devices are in use)

2. The Center has effective processes in place that demonstrate its commitment to identifying post resuscitation patients with a return of spontaneous circulation who are likely to benefit from PCI as well as a commitment to providing PCI to this subset of patients. The Center may demonstrate this best by describing the:
 - a. process used to select post cardiac arrest patients with return of spontaneous circulation with a likely acute myocardial infarction prior to the cardiac arrest and those with VF/VT as the precipitating rhythm
 - b. process for providing PCI to patients who are also receiving therapeutic hypothermia (or documentation as to why PCI was not appropriate for the patient)
 - c. capabilities to provide 24/7 PCI to patients identified in the Center's selection process
 - d. the process used to track and evaluate the door to balloon time for patients identified in the Center's selection process
 - e. commitment by cardiology and interventional cardiology to utilize these processes for the selected patients

Resuscitation Center of Excellence Designation Process

Detailed Process Criteria (cont'd)

Commitment to Continued Post Resuscitation Care

1. The Center has effective processes in place that demonstrate its commitment to providing continued post resuscitation care once therapeutic hypothermia and PCI (if indicated) have been provided. The Center may demonstrate this by describing the:
 - a. respiratory and critical care management resources available for post resuscitation patients with return of spontaneous circulation
 - b. cardiac rehabilitation resources available for this set of patients
 - c. commitment by hospitalists/intensivists to utilize these processes for the selected patients

2. The Center has an effective process for identifying patients at risk for future acute arrhythmic events and for determining the need for ICD implantation. The Center may demonstrate this by describing this process and describing:
 - a. the electrophysiology services available for this purpose
 - b. the capabilities to provide ICD implantation services as needed

Commitment to Risk Reduction and Additional Services

1. The Center has effective processes in place that demonstrate its commitment to providing cardiac risk reduction services to post arrest patients prior to hospital discharge. The Center may demonstrate this by describing the:
 - a. cardiac rehabilitation services provided to post arrest patients prior to hospital discharge
 - b. process for providing current cardiovascular risk screening and reduction services appropriate for the specific patients (e.g. blood pressure control, cholesterol management, beta blocker use, etc) prior to hospital discharge
 - c. process for providing risk reduction education to post arrest patients prior to hospital discharge
 - d. the process for providing or referring CPR training for the patient's family members, primary caregivers, friends and/or neighbors

2. The Center has effective processes in place that demonstrate its commitment to providing the following additional services to the patient or the patient's family during the course of patient care at the Center. The Center may demonstrate this by describing:
 - a. how it provides grief services to the patient's family
 - b. how it provides services for organ donation when consented by the family

Resuscitation Center of Excellence Designation Process

Detailed Process Criteria (cont'd)

Commitment to Performance Evaluation and Improvement

1. The Center has an effective process for tracking performance related to the criteria described in this document. The Center may best demonstrate this process by describing:
 - a. the frequency of performance data evaluation
 - b. the Center's staff responsible for overseeing process improvement
 - c. how the Center will use the performance data to improve these processes
 - d. the name(s) and contact information for the person(s) responsible for coordinating all aspects of the Resuscitation Center designation and for collecting/reporting the required outcome data

2. The Center has established a process for sharing performance and outcome data with the Austin/Travis County EMS System Office of the Medical Director. The Center may best demonstrate this process by describing the:
 - a. hospital and EMS staff who will be involved in the performance and outcome data discussions and data transmissions
 - b. agreement to share this data for purposes of quality improvement
 - c. agreement to share post arrest data elements for entry into the web-based CARES registry
 - d. the mechanisms by which the Center and the EMS System will collaborate to improve performance as indicated by performance data

3. The Center meets with the Austin/Travis County EMS System Office of the Medical Director annually to:
 - a. evaluate annual performance data
 - b. express commitment to remain a Resuscitation Center of Excellence within the EMS System
 - c. request a renewal of designation based on performance data

4. The Office of the Medical Director, upon review of annual performance data and the Center's request for designation renewal, will:
 - a. provide feedback to the Center regarding potential improvements, if any
 - b. determine whether renewal of designation will be provided

Appendices

Appendix A - Designation Process Flow Chart

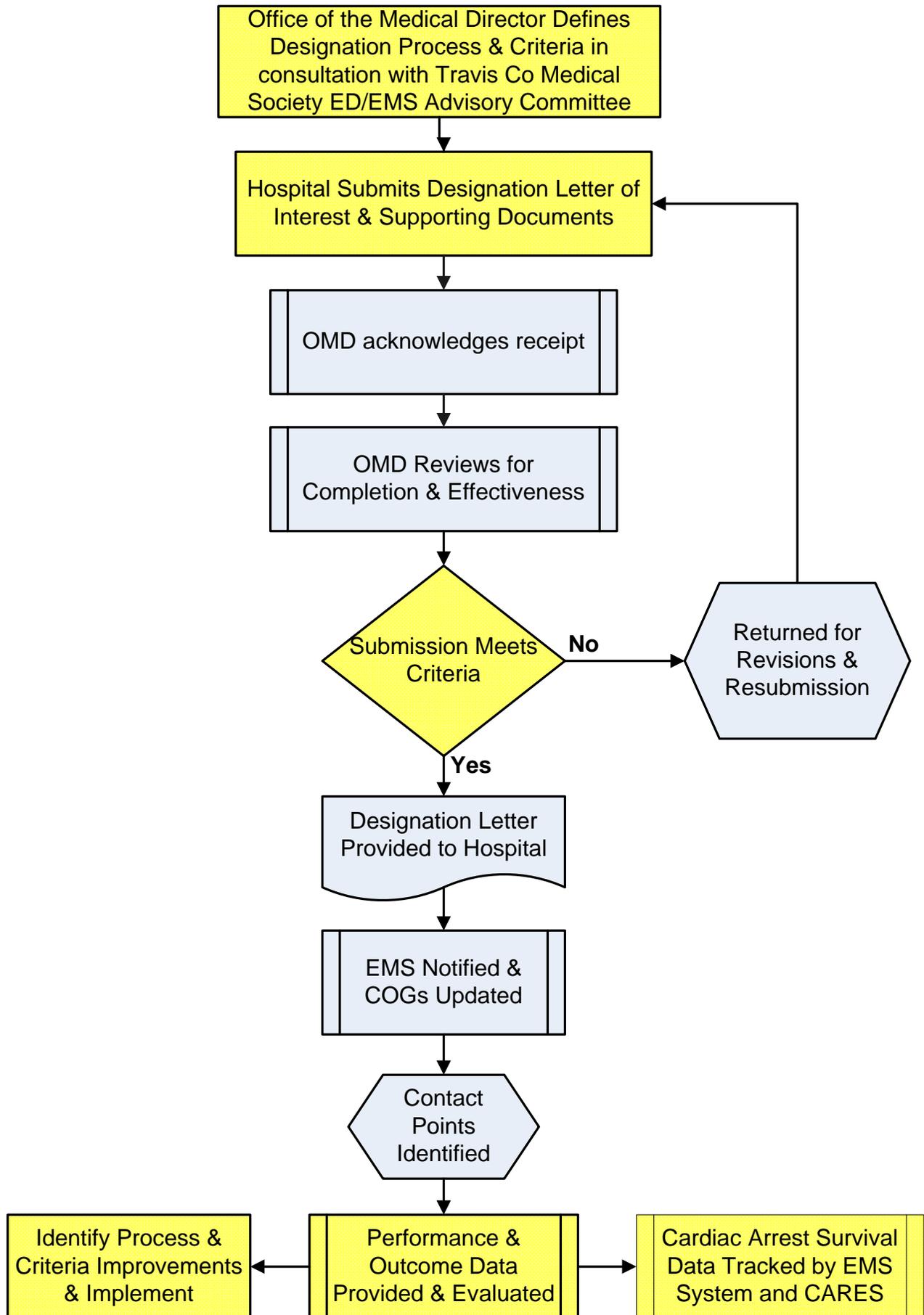
**Appendix B - Hospital Data Elements
(for EMS use)**

Appendix C - Point of Contact Information

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Appendix A – Designation Process Flow Chart

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Appendix B – Hospital Data Elements (for reporting to the EMS System)

Data Dictionary for Resuscitation Center of Excellence Patient Reporting

a-f Provided by ATCEMS

1-18 Provided by Resuscitation Center

Number	Item	Definition	Specific Format
a	Date of Arrival	Date of Hosp Arrival	MM/DD/YYYY
b	Receiving Facility	Name of the Receiving hospital	Drop Down Menu
c	Time Arrived at the ED	Time the patient arrived at the Emergency Department	hh:mm
d	Age	Enter the age of the patient in years.	NNN
e	Gender	Enter the gender of the patient as M or F	M; F
f	Initial Rhythm	Enter the initial rhythm for this patient on arrival to the ED	Drop Down Menu
1 (O)	Medical Record Number (Optional, Enter if Available)	OPTIONAL: Enter the hospital medical record number. This will aid in tracking outcome information later.	Free Text (alpha or numeric)
2	Temperature on arrival of ED (Degrees Celsius)	Enter the first temperature obtained upon arrival at the hospital (preferably in the ED). The entry is in degrees Celsius.	Numeric, NN.n
3	Therapeutic Hypothermia in Facility?	Indicate whether therapeutic hypothermia was: Continued - Initiated by EMS; Initiated - Not begun by EMS; No Therapeutic Hypothermia	Drop Down Menu
4 (O)	Method used in Facility to maintain or initiate therapy (Optional)	OPTIONAL: Which device or method was used to continue therapeutic hypothermia. Select: Ice Packs only; External Cooling Device; Intravascular Cooling Device; Combination of Methods; Other	Drop Down Menu
5	Duration of therapeutic hypothermia	Enter the duration of the therapy in hours (approximate time rounded to the nearest hour)	NN
6	Reason Therapeutic Hypothermia was Discontinued or Not Initiated (Be Specific)	If hypothermia was discontinued early or at any time other than the planned time period or if hypothermia was not initiated at all, please describe the specific reason(s) why. Use Comments section if additional space is needed.	Free Text (short)
7	Did the Patient go to the Cath Lab within 24 hours?	Enter Y or N indicating whether the patient was taken to the cath lab within the first 24 hours after arriving at the hospital (includes time in the ED)	Y; N
8	Date to the Cath lab	Enter the date the patient arrived at the cath lab	MM/DD/YYYY
9	Time of arrival at Cath lab	Enter the approximate time the patient arrived at the cath lab	HH:MM
10	Date of Discharge or Death	Enter the date the patient was either discharged alive from the hospital or died in the hospital regardless of code status, hospice care, or comfort care (e.g. no longer being billed by the receiving hospital for continued care).	MM/DD/YYYY
11	Reason patient did NOT go to the cath lab within 24 hours	If the patient did not arrive at the cath lab within 24 hours of hospital arrival, briefly describe the reasons for this decision	Free Text (short)
12 (O)	Pre-Arrest Neurological Status (if known)	Select the appropriate response from the drop-down menu indicating the CPC score for the patient prior to the cardiac arrest if this can be obtained. Leave blank if this information is not available. (CARES CPC scoring)	Drop Down Menu
13	Neurological status at time of discharge	Select the appropriate response from the drop-down menu indicating the CPC score for the patient at the time of discharge from the hospital. (CARES CPC scoring)	Drop Down Menu
14	ED Outcome	This field indicates where the patient went after leaving the ED. Menu choices: Resuscitation Terminated in ED; Admitted to ICU/CCU; Admitted to Floor; Transferred to another acute care facility from the ED.	Drop Down Menu
15	Hospital Outcome	Choose the final outcome from the hospital using the drop down menu. This field indicates whether the patient: Died in the Hospital; Discharged Alive; or Transferred to another acute care facility.	Drop Down Menu
16	Discharged to	Choose the location to which the patient was discharged using the drop down menu. Menu choices: Home/Residence; Rehabilitation Facility; Skilled Nursing Facility; Unknown.	Drop Down Menu
17	Was an ICD implanted prior to hospital discharge?	Choose Yes or No based on whether the patient had an ICD implanted prior to being discharged from the hospital (does not require implantation at the receiving hospital). The ICD does not have to be implanted at the reporting hospital but the patient must still be admitted to the reporting hospital. If known, list in the comments section the reason the ICD was not placed.	Y; N
18 (O)	Comments	Enter any comments that are pertinent to the case. If there are any unusual details or concerning events, these should be noted here.	Free Text

Appendix C – Point of Contact Information

Organization	Name & Responsibility	Contact Information
<i>Austin/Travis County Office of the Medical Director</i>	Paul R. Hinchey, MD MBA Medical Director	517 South Pleasant Valley Rd, Austin, TX 78741 512-978-0000 Office 512-978-0010 Fax Paul.hinchey@ci.austin.tx.us
	Louis Gonzales Performance Management & Research Coordinator	517 South Pleasant Valley Rd, Austin, TX 78741 512-978-0011 Office 512-563-6882 Cell 512-978-0019 Secure Fax louis.gonzales2@ci.austin.tx.us

Revision Summary Page

March 28, 2008

First Edition Released

February 9, 2009

Page 1 – Deleted start date and clarified as Adult post arrest patients only

Page 5 – Revised language indicating that OMD will enter CARES outcome data rather than the receiving hospital

Page 10 – Revised Point of Contact information to delete Ed Racht, MD information and replace with the contact information for interim medical directors.

January 20, 2010

Significant revisions to all sections with most changes made to pages 1, 3 and 6.

The Appendix A process flow was updated.

The Appendix B data element list was decreased and modified.

The Appendix C contact information was updated.