Concho Valley Regional Advisory Council (CVRAC)
Trauma Service Area (TSA) - K
Regional Stroke Plan

Concho Valley Regional Advisory Council
PO Box 60125
San Angelo, TX 76906

Email: cvrac@shannonhealth.org

For the state service delivery area including Coke, Concho, Crockett, Irion, Kimble, Mason, McCulloch, Menard, Reagan, Runnels, Schleicher, Sterling, Sutton, and Tom Green Counties.

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Organization

The Concho Valley Regional Advisory Committee (CVRAC) is comprised of the Central West Texas counties of Coke, Concho, Crockett, Irion, Kimble, Mason, McCulloch, Menard, Reagan, Runnels, Schleicher, Sterling, Sutton, and Tom Green. CVRAC represents the Trauma Service Area-K, a geographic area as defined by the Texas Department of State Health Services, and is a non-profit organization.

The CVRAC Stroke Committee mission is to provide a comprehensive continuum of quality health care for all stroke victims in TSA-K, through continuing Education, Research, Prevention and Performance Improvement.

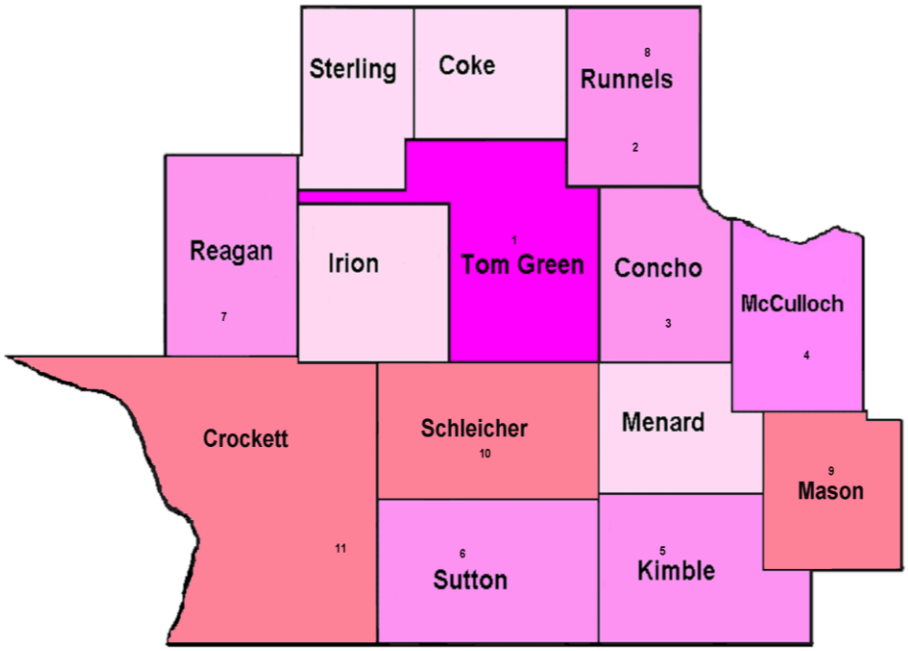
Service Area/Facilities

The CVRAC Service Area is comprised of thirteen rural counties and one urban county (Tom Green). Located in Tom Green County, San Angelo is home to 88,300 residents with Tom Green County estimated population at 103,938 residents. San Angelo is a regional commerce center for residents of southwest Texas and the Edwards Plateau. The area economy is based on agriculture, oil and gas production, education, and manufacturing. Of the top 20 largest employers in San Angelo, 7 are directly involved in health care in some format and employ a minimum of 5573 employees at any given time. Amongst these is Ethicon (Johnston & Johnson), the world's largest manufacturer of surgical sutures and Blue Cross Blue Shield of Texas in medical claims processing. Located three and one-half hours from Dallas/Fort Worth and three hours from San Antonio, San Angelo serves a regional trade area and is considered the *primary catchment area* for our EMS system. According to the U.S. Census Bureau, as of July 1, 2006, San Angelo's population is up from 87,844 in 2005 but has declined by 0.07% from its peak of 88,419 in 2000. The population in the remaining thirteen county service area is estimated at 53,717 for a total service area population of 157,655. Individual counties and estimated populations in this service area include*:

COUNTY	**POPULATION**	**SQ. MILES**	**HOSP./TRAUMA LEV.**
Tom Green	*103938*	*1522*	*Shannon Med. Center*
			San Angelo Community
Coke	3623	899	
Concho	3654	992	Concho Co. / Lev. IV
Crockett	3879	2807	Ozona Clinic
Irion	1814	1052	
Kimble	4570	1251	Kimble Co./ Lev. IV
Mason	3902	932	
McCulloch	8016	1069	Heart of Texas/ Lev. IV
Menard	2210	902	
Reagan	3022	1175	Reagan Mem./Lev IV
Runnels	10724	1051	Ballinger Mem./ Lev IV
			North Runnels. Co.
Schleicher	2776	1311	Schleicher Co.
Sterling	1246	923	
Sutton	4281	1454	Lillian Hudspeth/Lev IV
TOTALS	**157655**	**17340**	

(*Italicized county, population, and square mileage indicates "primary" catchment with all others indicating "secondary" catchment.)

San Angelo is served by two acute care hospitals. Shannon Medical Center, a 400 licensed bed, not-for-profit hospital serves as the Level III Lead Trauma Facility for this service area and also provides MICU helicopter service. Additionally, Shannon is actively seeking designation as a Recognized Stroke Facility for this area. San Angelo Community Medical Center (SACMC) is a 171-bed for profit, acute care, and JCAHO accredited hospital located in the southwest portion of the city and is the oldest continuously operated medical facility in the Concho Valley. SACMC and Shannon work closely together to provide the optimum in trauma and emergency care throughout the area and share responsibility for co-funding with CVRAC for our redundant emergency communications system for the area. With over 150 physicians and 40 dentists practicing multiple specialties, San Angelo is widely recognized as a regional medical center. Other specialized medical facilities include: a 28 bed long term acute care hospital, a regional rehabilitation center, a geriatric care facility, a mental health and drug rehabilitation hospital and 8 rural hospitals in the service area that refer patients needing specialized care. There are currently 7 nursing homes and an additional 9 retirement centers providing a variety of living accommodations and levels of care, including Alzheimer's care. The community supports Angelo State University and Howard College, San Angelo Campus. Affiliation with these higher education facilities as well as local and area paramedic / EMT programs enables students in varying aspects of health care to acquire experience and knowledge by providing one-on-one patient–caregiver interaction and also serves to promote ongoing communication and interaction between the organizations and provide potential jobs for these students.



	Primary Catchment Area
	Secondary Catchment Area with Level IV Facility
	Secondary Catchment Area with Emergent Access Facility
	Secondary Catchment with NO facility in county

HOSPITALS

1.	*San Angelo Community Medical Center*
2.	Shannon Medical Center – San Angelo
3.	Ballinger Memorial Hosp. – Ballinger
4.	Heart of Texas Hosp. – Brady
5.	Kimble Co. Hosp. – Junction
6.	Lilllian Hudspeth Hosp. - Sonora
7.	Reagan Co. Hosp. – Big Lake
8.	North Runnels Hosp. – Winters
9.	
10.	Schleicher Co. Hosp. – Eldorado
11.	Ozona Clinic. – Ozona

Regional Plan

This Plan has been developed in accordance with generally accepted Stroke guidelines and procedures for implementation of a comprehensive Emergency Medical Services (EMS) and Stroke System plan. This plan does not establish a legal standard of care, but rather is intended as an aid to decision-making in general patient care scenarios. It is not intended to supersede the physician's prerogative to order treatment.

TSA K - EMS SERVICES

Air Med 1
Heather Tiftickjian – AirMed1 Program Director
120 E. Harris
San Angelo, Texas 76903
(325) 481-8588
Fax – (325) 481-8407
Dispatch – Shannon Communication Center – (325) 481-8400
Geographic Service Area – 19 county region
Level of Service – MICU – AirMedical
Medical Director – Dr. Charles Benham
Number of Vehicles - One
Primary Radio Frequency – 155.340
Closest Medical Facility: Shannon Medical Center

Ballinger EMS
Carolyn Priddy – EMS Director
P.O. Box 617
Ballinger, Texas 776821
(325) 365-2531
Fax – (325) 365-2662
Dispatch – 911
Geographic Service Area – Southern half of Runnels Co.
Level of Service - BLS / MICU
Medical Director – Karen Rightmire D.O.
Number of Vehicles - 2
Primary Radio Frequency – 155.340
Closest Medical Facility: Ballinger Memorial Hospital, Ballinger

Big Lake EMS
Robin Collins – Asst. EMS Director
Alan Garner – Fire Chief / EMS Director
207 N. Plaza
Big Lake, TX 76932
(325) 884-3650
Fax – (325) 884-3396
Dispatch – 911; Non Emergency: Sheriffs Office – (325) 884-2424; Hospital – (325) 884-2561
Geographic Service Area – 2400 square miles; Hwy 67, Hwy 137 intersect in city
Level of Service – BLS with ALS capabilities
Medical Director – Joseph Sudolcan MD
Number of Vehicles – 2
Primary Radio Frequency – KWM603; TX154.740 NAC 192 Rx 155.790 NAC 192
Closest Medical Facility: Reagan Memorial Hospital, Big Lake

Brady EMS
Eddie Sayles (Title?)
P.O. 351
Brady, Texas 76825
(325) 597-3489
Fax – (325) 456-9202
Dispatch – Brady PD – 597-2121
Geographic Service Area – McCulloch County – 1073 sq. miles
Level of Service – MICU
Medical Director – Dr. Benham
Number of Vehicles – 3
Primary Radio Frequency – 155.040
Closest Medical Facility: Heart of Texas Hospital, Brady

Christoval VFD/FRO
Della Messer - EMS Administrator
P.O. Box 193
Christoval, TX 76935
(325) 396-2532
Fax – (325) 896-2532
Dispatch - 911
Geographical Service Area – Tom Green
Level of Service – First Responder
Medical Director – Emmette T. Flynn MD
Number of vehicles – 1First Responder Truck
Primary Radio Frequency – 155.130
Closest Medical Facility: San Angelo Community Hospital

Crockett Co. EMS
Eddie Martin - Director
P.O. Box 577
Ozona, Texas 76943
(325) 392-3404
Fax –(325) 226-4808
Dispatch – 325-392-2661
Geographic Service Area – Crockett County
Level of Service – BLS with MICU capability
Medical Director – Marcus Sims DO
Number of Vehicles - 3
Primary Radio Frequency – 155.955
Closest Medical Facility: Sonora

East Coke County EMS
Stephen Salmon - President
PO Box 357
Bronte, Texas 76933
(325) 224-3047
Fax – (325) 224-4327
Dispatch – Robert Lee Care Center 911 or 473 2511
Geographic Service Area – East ½ Coke County
Level of Service – BLS w/ALS Capability
Medical Director – Dr. Flynn
Number of Vehicles - one
Primary Radio Frequency – 155.2200 Rx – 155.8050 Tx
Closest Medical Facility: Shannon Medical Center, San Angelo

Eden EMS
Ronnie Sanders - Asst Coordinator
PO Box 268
Eden, Texas 76837
(325) 869-2022
Fax – (325) 869-5006
Dispatch – 325-869-2222
Geographic Service Area – Concho County
Level of Service – BLS MICU Capable
Medical Director – Dr. Don Klinger
Number of Vehicles - 2
Primary Radio Frequency – 155.730
Closest Medical Facility: Concho County Hospital

Irion EMS
Beverly Rose - Director
P.O. Box 375
Mertzon, Texas 76941
(325) 835-8342
Fax – (325) 835-8342
Dispatch – 911 or 835-2551
Geographic Service Area – Irion County
Level of Service – ALS / BLS
Medical Director – Dr. Wagner
Number of Vehicles - 2
Primary Radio Frequency – Rx 151.550; Tx159.525: PL 97.4 12.5K
Closest Medical Facility: San Angelo

Kimble EMS
Ted Sandlin - Director
151 Hospital Drive.
Junction, Texas 76849
(325) 446-3300
Fax – (325) 446-4665
Dispatch – 325-446-2766
Geographic Service Area – Kimble County
Level of Service – BLS with MICU Capability (MICU-staffed app. 70% of shifts)
Medical Director – Dr. A.N. Martinez, M.D.
Number of Vehicles – 3 Type III
Primary Radio Frequency – RX: 154.370, TX: 153.950
Closest Medical Facility: Kimble Hospital, Junction

Mason EMS
Linda Williams - Director
P.O. Box 96
Mason, Texas 76856
(325) 347-6593
Fax – (325) 347-0243
Dispatch – 911
Geographic Service Area – Mason County
Level of Service – BLS with MICU
Medical Director – Dr. J. Cohn
Number of Vehicles – 2
Primary Radio Frequency – 154.34 RX TX 153.83 Repeater 97.4
Closest Medical Facility: Heart of Texas Hospital

McCulloch FRO
Joe Foster – Brady Fire / EMS Chief
216 W. Commerce
Brady, TX 76825
(325) 597-2311
Fax – (325) 597-4684
Dispatch – Brady PD: 325-597-2121
Geographic Service Area – McCulloch County – 1073 sq. miles
Level of Service – MICU
Medical Director – Dr. Benham
Number of Vehicles – 3
Primary Radio Frequency – 155.040
Closest Medical Facility: Heart of Texas Hospital, Brady

Menard EMS
Brent Frazier – RAC Delegate
PO Box 1261
Menard, TX 76859
(325) 396-4626
Fax – (325) 396-2802
Dispatch – 911 or 325-396-4705
Geographical Service Area – Menard
Level of Service – BLS / MICU capable
Medical Director – Dr. Martinez
Number of vehicles- 3
Primary Radio Frequency – 155.564
Closest Medical Facility: Eden

North Runnels EMS
Larry Collom – Asst. EMS Director
P.O. Box 185
Winters, Texas 79567
(325) 754-4553
Fax – (325) 754-3022
Dispatch – 325-754-5500 or 911
Geographic Service Area – Runnels Co. / South Taylor
Level of Service – BLS / MICU
Medical Director – Sarah Endicott MD
Number of Vehicles - 2
Primary Radio Frequency – Statewide EMS
Closest Medical Facility: North Runnels Hospital, Winters

San Angelo Emergency Corp.
Clint Pelzel - (Title?)
601 Locust
San Angelo, Texas 76901
(325) 655-4777
Fax – (325)
Dispatch –
Geographic Service Area –
Level of Service –
Medical Director –
Number of Vehicles -
Primary Radio Frequency –
Closest Medical Facility

Schleicher Co. EMS
T.J. Rodriguez – EMS President
PO Box 637
El Dorado, Texas 76936
(325) 853-3456
Fax – (325) 853-4136
Dispatch – 325-853-2737
Geographic Service Area – Schleicher County
Level of Service – BLS with ALS capability
Medical Director – Dr. Carroll
Number of Vehicles - 2
Primary Radio Frequency –
Closest Medical Facility: Schleicher County Medical Center, El Dorado

Sterling EMS
Nell Castro – EMS Director
PO Box 1036
Sterling City, Texas 76951
(325) 378-4902 or 325-277-9137
Fax – (325) 378-4902
Dispatch – Mertzon Co 911
Geographic Service Area – Sterling County
Level of Service – ALS w/ MICU capabilities
Medical Director – Dr. Don Klinger
Number of Vehicles - 2
Primary Radio Frequency –
Closest Medical Facility: Shannon Medical Center, San Angelo

Sutton EMS
Rose Butler - EMS Administrator
PO Box 1067
Sonora, Texas 76950
(325) 387-5132
Fax – (325) 387-3872
Dispatch – 911; Sheriff Office (325-387-2288); LMH Hospital (325-387-2521) -- Hudspeth Hospital is used as back up system if paging is down at 911.
Geographic Service Area – Sutton County
Level of Service – BLS/ALS
Medical Director – Charles R. Pajestka, M.D.
Number of Vehicles – 3 BLS/ALS
Primary Radio Frequency – 155.340
Closest Medical Facility: Lillian M. Hudspeth Hospital, Sonora

West Coke County EMS
Mary Bessent - Director
PO Box 1209
Robert Lee, Texas 76945
(325) 453-2511
Fax – (325) 453-4338
Dispatch – 911 or 325-453-2511
Geographic Service Area – Coke County
Level of Service – BLS
Medical Director – Dr. Flyn
Number of Vehicles - 1
Primary Radio Frequency –
Closest Medical Facility: Shannon Medical Center, San Angelo

RAC Recognized Stroke Capable Facility

Goal

Recognition of a facility's capability to treat stroke patients within TSA-K based on the State requirements for Stroke Center Designation.

Objectives

1. To identify facilities and corresponding level of stroke management within TSA-K.
2. To improve patient outcomes through direction of the stroke victim to the most appropriate facility.

Discussion

While it is recognized many of the facilities within TSA-K may elect NOT to seek Stroke Center Designation, in effort to provide the optimum in patient care and thereby improve outcomes, CVRAC has elected to utilize the criteria set forth by the State of Texas for Stroke Center Designation as the foundation in identifying individual facility capabilities.

Requirements for Texas Stroke Center Designations

(A.)The Governor's EMS and Trauma Advisory Council (GETAC) Stroke Committee of the Department of State Health Services (DSHS) Stroke Committee recommend the designation of three levels of state recognized stroke centers/facilities as follows:

Level I: Comprehensive Stroke Centers
Level 2: Primary Stroke Centers
Level 3: Support Stroke Facilities

(B) Each center applying for state Stroke Center/Facility level designation shall meet the following criteria:

1) Level 1: Comprehensive Stroke Centers ("CSCs") will meet the requirements specified in the Consensus Statement of Stroke on Comprehensive Stroke Centers. (Recommendations for comprehensive Stroke centers: a consensus statement from the Brain Attack Coalition. Stroke. 2005; 36(7):1597-616 Attached to this document for reference). These include, but are not limited by, the following specifications:
    a. A 24/7 stroke team capability as defined herein plus all of the requirements specified for a Primary Stroke Center
    b. Personnel with expertise to include vascular neurology, neurosurgery, neuroradiology, interventional neuroradiology/endovascular physicians, critical care specialists, advanced practice nurses, rehabilitation specialists with staff to include physical, occupational, speech, and swallowing therapists, and social workers.
    c. Advanced diagnostic imaging techniques such as magnetic resonance imaging (MRI), computerized tomography angiography (CTA), digital cerebral angiography and transesophageal echocardiography.
    d. Capability to perform surgical and interventional therapies such as stenting and angioplasty of intracranial vessels, carotid endarterectomy, aneurysm clipping and coiling, endovascular ablation of AVM's and intra-arterial reperfusion.
    e. Supporting infrastructure such as 24/7 operating room support, specialized critical care support, 24/7 interventional neuroradiology/endovascular support, and stroke registry
    f. Educational and research program

2) Level 2: Primary Stroke Centers ("PSCs") will meet the requirements specified in "Recommendations for the Establishment of Primary Stroke Centers, JAMA 2000 June 21; 283 (23):3125-6." They will be able to deliver stroke treatment 24/7. These include, but are not limited by, the following specifications:
    a. 24 hour stroke team
    b. Written care protocols
    c. EMS agreements and services
    d. Trained ED personnel
    e. Dedicated stroke unit
    f. Neurosurgical, Neurological, and Medical Support Services
    g. Stroke Center Director that is a physician
    h. Neuroimaging services available 24 hours a day
    i. Lab services available 24 hours a day
    j. Outcomes and quality improvement plan
    k. Annual stroke CE requirement
    l. Public education program
3) Level 3[1]: Support Stroke Facilities ("SSFs") provide timely access to stroke care but may not be able to meet all the criteria specified in the Level 1(CSCs) and Level 2 (PSCs) guidelines. They are required to:
    a. Develop a plan specifying the elements of operation they do meet.
    b. Have a Level 1 or Level 2 center that agrees to collaborate with their facility and to accept their stroke patients where they lack the capacity to provide stroke treatment.
    c. Identify in the plan the Level 1 or Level 2 center that has agreed to collaborate with and accept their stroke patients for stroke treatment therapies the SSF are not capable of providing
    d. Obtain a written agreement between the Level 1 or Level 2 Stroke Center with their facility specifying the collaboration and interactions.
    e. Develop written treatment protocols which will include at a minimum:
        1. Transport or communication criteria with the collaborating/accepting Level 1 or Level 2 center.
        2, Protocols for administering thrombolytics and other approved acute stroke treatment therapies.
    f. Obtain an EMS/RAC agreement that:
        1. clearly specifies transport protocols to the SSF, including a protocol for identifying and specifying any times or circumstances in which the center cannot provide stroke treatment; and,
        2. specifies alternate transport agreements that comply with GETAC EMS Transport protocols.
    g. Document ED personnel training in stroke.
    h. Designate a stroke director (this may be an ED physician or non-Neurologist physician)
    i. Employ the NIHSS for the evaluation of acute stroke patients administered by personnel holding current certification
    j. Clearly designate and specify the availability of neurosurgical and interventional neuroradiology/endovascular services.

[1] The designation of a Level 3 Center is defined to allow timely access to acute stroke care that would not otherwise be available such as in rural situations where transportation and access are limited and is intended to recognize those models that deliver standard of care in a quality approach utilizing methods commonly known as "drip and ship" and telemedicine approaches.

Document access and transport plan for any unavailable neurosurgical services within 90 minutes of identified need with collaborating Level 1 or 2 Stroke Center.
(C) Centers or hospitals requesting Level 1, Level 2, or Level 3 state-approved Stroke Center/Facility designation will submit a signed affidavit by the CEO of the organization to the DSHS detailing compliance with the requirements designated in this Rule.

1.) Centers or hospitals seeking Level 1 CSC or Level 2 PSC state-approved Stroke Center designation who submit a copy of that level of certification by state-recognized organizations such as JCAHO shall be assumed to meet the requirements pursuant to this Rule.

2.) Each center or hospital shall submit annual proof of continued compliance by submission of a signed affidavit by the CEO of the organization.

(D) DSHS will publish a list on its website of hospitals or centers meeting state approved criteria and their Stroke Center/Facility designation. This list will also be made available to the state RAC's for EMS transportation plans.

1.) Centers holding JCAHO or other state-recognized certification will be specified with an additional qualifier and will be listed prior to listing centers holding similar level designation without formal certification.

(e) If a hospital or center fails to meet the criteria for a state Stroke Center/Facility level designation for more than 6 weeks or if a hospital or center no longer chooses to maintain state Stroke Center/Facility level designation, the hospital shall immediately notify, by certified mail return receipt requesting, the DSHS, local EMS, and governing RAC.

(f) If a hospital is in good standing and on the approved state Stroke Center list, the hospital may advertise to the public its state-approved status and state level designation. A Texas Level 1 (CSC) may use the words, "Texas-approved Level 1 Stroke Center" or "Texas-approved Comprehensive Stroke Center". A Level 2 center may use the words, "Texas-approved Level 2 Stroke Center" or "Texas-approved Primary Stroke Center". A Level 3 Stroke Facility approved by the state may use the words "Texas-approved Level 3 Support Stroke Facility" or "Texas-approved Support Stroke Facility". If the hospital or center is removed from state-approved level Stroke Center/Facility designation, no further public advertising is allowed and existing advertising must, where feasible, be removed from public distribution within 60 days from the date of removal. To the extent that removal of advertisement is infeasible, for example advertisement previously distributed in magazines, newspapers or on the internet, any automatic renewal of such advertisement shall be cancelled upon removal, and no further advertisement in said media shall be pursued.

CRITERIA CLARIFICATION

PERSONNEL

24/7 Physician – A physician in the ED available 24/7. If the physician is not on-site, he/she must be on-call for arrival within 30 minutes.

Stroke Coordinator – A designated Stroke Coordinator is desired for all facilities. In the event the facility elects to not have a designated Stroke Coordinator, each facility is responsible for assigning one individual to gather and submit required data on stroke patients seen or treated at their facility to the CVRAC on a quarterly basis. The Stroke Coordinator or assigned representative must attend CVRAC Stroke Committee meetings according to CVRAC attendance requirements. Other duties for this individual will be entity defined.

Stroke Medical Director – The facility must have a designated Medical Director for stroke protocols.

PROTOCOLS

NIH Stroke Scale Protocol – It is recommended facilities have a written protocol utilizing the NIH Stroke Scale.

tPA Checklist – The facility should utilize the regional tPA Checklist or a similar checklist with the same information.

Thrombolytic Therapy Administration Protocol – This criterion refers to a facility having a written protocol for administering thrombolytics if the facility will be administering thrombolytics.

EQUIPMENT/LAB

24/7 STAT CT – This criterion is desired. This criterion refers to the ability to have a CT completed and read within 45 minutes of arrival to ED.

24/7 Laboratory – This criterion is desired and refers to the facilities ability to have laboratory available 24/7 on-site or on-call within 30 minutes. These labs include but are not limited to PT, PTT, INR, CBC, and CMP.

TRANSFER AGREEMENTS

Agreements with Level I or Level II Stroke Centers - The facility should have written transfer agreements with certified Stroke Centers or facilities in active pursuit of Level I or Level II designation.

Agreements with EMS Providers – The facility should have at least one written agreement with an EMS Provider allowing stroke patients to be treated as priority one/emergent.

EDUCATION

NIH Stroke Scale Education – It is recommended facilities have written protocols outlining NIH Stroke Scale education for all nursing staff and physicians involved in stroke care. This training should be completed on an annual basis.

Other Stroke Education - It is recommended facilities have written protocols outlining stroke education for personnel. At a minimum "Stroke Awareness: Signs and Symptoms" education must be completed annually for facility personnel.

STROKE SYSTEM QI

The facility must have a system to QI stroke cases. Additionally, the facility must participate in CVRAC Regional Stroke QI.

PUBLIC AWARENESS/EDUCATION

The facility must participate in regional stroke awareness campaigns and other public education activities regarding stroke. CVRAC will be assisting facilities in meeting this criterion.

Regional Pre-Hospital Medical Oversight & Control

Goal

The goal for Regional Medical Control in TSA-K is multifaceted.

1. To ensure strong physician leadership and supervision for pre-hospital care providers in both on-line and off-line functions.
2. To secure medical involvement in regional planning and educational program development.
3. Provide for the development and implementation of regional protocols and system plan components, as well as in systems evaluation.

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Objectives

1. To evaluate regional stroke care from a systems perspective, under the direction of representatives of CVRAC medical staff throughout the region.
2. To ensure appropriate medical oversight of all pre-hospital care providers through a Quality Improvement (QI) process and other administrative processes.
3. To identify and educate regional medical control resources, standardize treatment protocols, and analyze accessibility of medical control resources.
4. To identify and educate CVRAC EMS providers and sources of on-line and off-line medical control.

Discussion

The CVRAC region includes both rural and urban hospital and emergency care providers with varying levels of medical capability. There is no single EMS medical director for EMS providers.

Physician Involvement in Regional Plan Development - The CVRAC Stroke Committee includes a minimum of one physician representative and meets on a quarterly basis to conduct its usual business and to review and approve regional planning components, policies, and protocols related to stroke medical care. Any interested CVRAC physician is invited to attend committee meetings.

Medical Direction of Pre-hospital Care Providers - In accordance with DSHS guidelines, all CV-RAC pre-hospital care providers function under medical control. Regional EMS protocols are printed and distributed to all EMS providers for incorporation into local protocols. Periodic reviews and updates are completed and upon approval are distributed as necessary. These protocols serve as a baseline and individual Medical Directors may adapt for their local community.

Regional Quality Improvement - The CVRAC Performance Improvement Committee meets quarterly to conduct its usual business and to carry out regional quality improvement activities. Stroke Coordinators or assigned personnel will gather data specific to the care of the stroke patient and report the data on a quarterly basis. This data will be correlated and reported to the Performance Improvement Committee as a part of the quarterly CVRAC PI process to review patient care and evaluate outcomes from a systems perspective. (Please see System QI section for more details). QI indicators include a review of all deaths, transfers out of region, and pediatric filters. (See form)

Pre-hospital Triage

Goal

Patients will be identified, rapidly and accurately assessed, and based on identification of their actual or suspected onset of symptoms, will be transported to the nearest appropriate TSA-K stroke facility based on:

National Stroke Association's goals for *Stroke Rapid Response*™ are to:

1. Increase and maintain prehospital providers' knowledge of stroke
2. Increase recognition of stroke signs and symptoms on scene
3. Increase the occurrence of EMS calls identifying symptoms as "possible stroke/CVA"
4. To facilitate delivery of stroke patients to the nearest appropriate hospitals including recognized stroke centers
5. Reduce enroute time and time to treatment

Purpose

In order to ensure the prompt availability of medical resources needed for optimal patient care, each patient will be assessed for the presence of abnormal vital signs, Cincinnati Stroke Scale, and concurrent disease/predisposing factors.

System Triage

- Patients with an onset of stroke symptoms <4½ hours should be taken to the closest Recognized Stroke Facility for treatment and evaluation for interventional care.

- Unless immediate stabilization (ABC's, cardiac arrest, etc.) is required, patients in TSA-K with an onset of stroke symptoms > 4½ hours or < 8 hours shall be taken to a Primary Stroke Center within TSA-K. If ground transport time to Primary Stroke Center is greater than 30 minutes or if lifesaving interventions (e. g. airway stabilization, chest tube insertion, etc.) are required for safe transport, contact medical control and/or take the patient to the nearest medical facility and **call for the helicopter transport to meet you at the closest agreed upon landing zone**.

  Primary Stroke Center bypass may only occur for the following reasons:
  1) Patient preference
  2) Physician Preference
  3) Paramedic Discretion

Patients with an onset of stroke symptoms > 8 hours should be taken to the closest acute care or Support Stroke facility for treatment.

Helicopter Activation

Goal

TSA-K regional air transport resources will be appropriately utilized in order to reduce delays in providing optimal stroke care.

Decision Criteria

1. Helicopter activation/scene response should be considered when it can reduce transportation time for patients with onset of symptoms less than 8 hours. Should there be any question whether or not to activate TSA-K regional air transport resources, on-line medical control should be consulted for the final decision.

2. Patients meeting criteria for helicopter dispatch should be transported to the nearest Primary Stroke Center.

Facility Diversion

Goal

TSA-K stroke facilities will communicate "facility diversion" status promptly and clearly to regional EMS and other facilities through EMSystem in order to ensure that stroke patients are transported to the nearest appropriate stroke facility.

System Objectives

1. To ensure that stroke patients will be transported to the nearest appropriate TSA-K stroke facility.

2. To develop system protocols for regional facility and stroke diversion status (see EMSystem guidelines and protocols):
    - Situations which would require the facility to go on diversion
    - Notification/activation of facility diversion status
    - Procedure for termination of diversion status

3. Regional stroke care problems associated with facility diversion will be assessed through the CV-RAC Committee QI process.

All facilities and pre-hospital providers will use EMSystem to notify and track of diversion statuses.

Facility Bypass

Goal

Suspected stroke patients will be safely and rapidly transported to the nearest appropriate stroke facility within TSA K.

Decision Criteria

Regional transport protocols ensure that patients who meet the triage criteria for activation of the TSA-K Regional Stroke Plan will be transported directly to the nearest appropriate stroke facility rather than to the nearest hospital except under the following circumstances:

1. If unable to establish and/or maintain an adequate airway, the patient should be taken to the nearest acute care facility for stabilization.

2. A Support Stroke Facility may be appropriate if the expected onset of symptoms is less than 4½ hours and there is a qualified physician available at the facility's Emergency Department capable of delivering definitive care.

3. Medical Control may wish to order bypass in any of the above situations as appropriate, such as when a facility is unable to meet hospital resource criteria or when there are patients in need of specialty care.

4. If expected transport time to the nearest appropriate Stroke Facility is excessive (> 30 minutes), medical control or the EMS crew on scene should consider activating air transportation resources.

Note: Should there be any question regarding whether or not to bypass a facility, the receiving facility should be consulted.

Facility Triage Criteria

Goal

The goal of establishing and implementing facility triage criteria in TSA-K is to ensure that all regional hospitals use standard definitions to classify stroke patients in order to ensure uniform patient reporting and facilitate inter-hospital transfer decisions.

Objectives

1. To ensure that each stroke patient is identified, rapidly and accurately assessed, and based on identification and classification of their actual or suspected onset of symptoms, transferred to the nearest appropriate TSA-K stroke facility.
2. To ensure the prompt availability of medical resources needed for optimal patient care at the receiving stroke facility.
3. To develop and implement a system of standardized stroke patient classification definitions.

Discussion

- Patients with an onset of stroke symptoms < 4½ hours should be taken to the closest Recognized Stroke Facility for treatment and evaluation for interventional care.

- Unless immediate stabilization (ABC's, cardiac arrest, etc.) is required, patients in TSA-K with an onset of stroke symptoms is greater than 4½ hours and less than 8 hours should be taken to a Primary Stroke Center within TSA-K.

- Patients with an onset of stroke symptoms > 8 hours should be taken to the closest acute care facility for treatment.

Inter-Hospital Transfers

Goal

The goal for establishing and implementing inter-hospital transfer criteria in TSA-K is to ensure that those stroke patients requiring additional or specialized care and treatment beyond a facility's capability are identified and transferred to a Primary or Comprehensive Stroke Center as soon as possible.

Objectives

1. To ensure that all regional hospitals make transfer decisions based on standard definitions which classify stroke patients according to TSA-K facility triage criteria.
2. To identify stroke treatment and specialty facilities within and adjacent to TSA-K.
3. To establish treatment and stabilization criteria and time guidelines for TSA-K patient care facilities.

Discussion

The level of stroke care resources required for stroke patients is outlined in the TSA-K facility triage criteria and pre-hospital triage criteria. When a suspected stroke patient is identified activation of a Code Stroke shall be initiated. A transferring facility shall state that the patient is a "Code Stroke" when calling EMS and the accepting Primary Stroke Center.

Level A Stroke – stroke symptom onset of less than 8 hours

Level B Stroke – stroke symptom onset of greater less than 8 hours

Level C Stroke – stroke symptom onset of greater than 8 hours

The time guideline for suspected stroke patient transfers in TSA-K is as follows:

- **Level B stroke patients are recommended to be <u>immediately</u> transported to a Primary Stroke Center within TSA K**
- **Level A Stroke patients may be initially transported to the closest stroke facility for initial treatment and consideration of interventional treatment.**
- **Level C Stroke patients should be transported to the closest acute care facility**

These criterions (see attached Regional Stroke Form) are monitored through the regional QI program.

<u>Identification of Stroke Patients & Stroke Transfers</u> - Stroke patients and their treatment requirements for optimal care are identified in the TSA-K facility triage criteria and pre-hospital triage criteria. Written transfer agreements are available between all TSA-K hospital facilities, and hospital facilities in adjacent regions. Stroke patients with special needs may be initially transferred to a Primary Stroke Center for assessment and treatment. When resources beyond its capability are needed, transfer to another stroke designated facility outside TSA K should be expedited. The TSA-K initial-receiving

hospitals may also choose to transfer patients with special needs directly to these facilities, bypassing the Primary Stroke Centers when appropriate.

- **Stroke Centers within TSA-K**

Level 2 (Primary) Stroke Centers	
Shannon Medical Center (*in active pursuit of designation)*	San Angelo
Level 3 (Support) Stroke Facilities	
San Angelo Community Medical Center	San Angelo
Ballinger Memorial Hospital	Ballinger
Heart of Texas Hospital	Brady
Kimble Co. Hospital	Junction
Lillian Hudspeth Hospital	Sonora
Reagan Co. Hospital	Big Lake
Emergent Access Facilities	
North Runnels Hospital	Winters
Schleicher Co. Hospital	El Dorado

Below are lists of possible facilities that may be utilized outside TSA K. These facilities are identified as within 250 miles of TSA-K Lead Facility in San Angelo.

- **Current Joint Commission Primary Centers 0**

Arlington Memorial Hospital
800 West Randol Mill Road
Arlington, **TX** 76012
817-548-6100

Baylor University Medical Center
3500 Gaston Avenue
Dallas, **TX** 75246
214-820-0111

Harris Methodist Fort Worth Hospital
1301 Pennsylvania Avenue
Fort Worth, **TX** 76104
817-250-2000

Medical Center of Arlington
3301 Matlock Road
Arlington, **TX** 76015
817-472-4850

North Austin Medical Center
12221 MoPac Expressway North
Austin, **TX** 78758
512-901-1000

Seton Medical Center Austin
Austin, **TX** 78705
512-324-7554

St. David's Hospital
919 East 32nd Street
Austin, **TX** 78705
512-544-7111

Providence Health Services of Waco
6901 Medical Parkway
Waco, **TX** 76712
254-202-2000

Tarrant County Hospital District
1500 South Main Street
Fort Worth, **TX** 76104
817-927-3890

University Medical Center at Brackenridge
601 East 15th Street
Austin, **TX** 78701
512-324-7554

United Regional Health Care System
1600 11th Street
Wichita Falls, **TX** 76301
940-764-3062

- **Other Stroke Centers outside TSA-K**

  Texas Neurosciences Institute @ Methodist Hospital
  4410 Medical Drive
  San Antonio, TX 78229
  210-575-6500

  Covenant NeuroScience Institute
  3610 22nd Street
  Suite 301
  Lubbock, Texas 79410
  806.725.0999

Stroke Patient Transport - Stroke patients in TSA-K are transported according to patient need, availability of air transport resources, and environmental conditions. Ground transport via BLS, ALS, or MICU ground ambulance is available throughout the Region. Air Medical transport (fixed and roto wing) is also available in this Region.

System Quality Improvement

Goal

The goals for system quality improvement in TSA-K are to establish a method for monitoring and evaluating system performance over time and to assess the impact of stroke system development.

Objectives

1. To identify regional stroke data filters which reflect the process and outcome of stroke care in TSA-K.
2. To provide a multidisciplinary forum for stroke care providers to evaluate stroke patient outcomes from a system perspective and to assure the optimal delivery of stroke care.
3. To facilitate the sharing of information, knowledge, and scientific data.
4. To provide a process for medical oversight of regional stroke and EMS operations.

Discussion

In order to assess the impact of regional stroke development, system performance must be monitored and evaluated from an outcomes perspective. A plan for the evaluation of operations is needed to determine if system development is meeting its stated goals.

Authority - The authority and responsibility for regional quality improvement rests with the Regional Advisory Council. This will be accomplished in a comprehensive, integrated manner through the work of the Medical Oversight, Stroke, and Pre-hospital committees.

Scope & Process - The Stroke Committee will determine the type of data and manner of collection, set the agenda for the QI process within the regularly-scheduled quarterly meetings of the committee, and identify the events and indicators to be evaluated and monitored. Indicator identification will be based on high risk, high volume, and problem prone parameters. Indicators will be objective, measurable markers that reflect stroke resources, procedural/patient care techniques, and or systems/process outcomes.

Occurrences will be evaluated from a system, outcomes prospective and sentinel events will be evaluated on a case-by-case basis. Activities and educational offerings will be presented to address knowledge deficits and case presentations or other appropriate mediums will be designed to address systems and behavioral problems. All actions will focus on the opportunity to improve patient care and systems operation. The results from committee activities will be summarized and communicated to the RAC membership. Problems identified that require further action will be shared with the persons and entities involved, for follow-up and loop closure. Committee follow-up and outcome reports will be communicated on a standard format (please see attached).

All QI activities and committee proceedings are strictly confidential. Individuals involved in performance management activities will not be asked to review cases in which they are professionally involved, but will be given the opportunity to participate in the review process.

Data Collection - QI data will be collected by the Stroke Coordinators. Quarterly reports are submitted for each CV-RAC hospital facility. Sentinel events will be used to focus attention on specific situations/occurrences of major significance to patient care outcomes.

Confidentiality - All information and materials provided and/or presented during QI meetings are strictly confidential.

CV-RAC facility data related to the following QI indicators are reviewed during the quarterly Stroke Committee meetings. See attached QI form. The QI From is reviewed and updated annually.

Reporting Quarters.

CV-RAC regional QI data-reporting quarters are as follows:

First Quarter:	Jan-Feb-Mar	Reporting at:	May meeting
Second Quarter:	April-May-June	Reporting at:	August meeting
Third Quarter:	July-August-Sep	Reporting at:	November meeting
Fourth quarter:	Oct-Nov-Dec	Reporting at:	February meeting

Stroke Performance Improvement Form
~ Hospital ~

Date:_____

Name of Entity:_____

Person Completing Report:_____

Reporting Period	Due Date
___(Jan → Mar)	April 30
___ (Apr → Jun)	July 31
___ (Jul → Sep)	Oct 31
___ (Oct → Dec)	Jan 31

Performance Improvement Criteria / Indicators			
1	Total number of stroke patients treated at your facility		
2	Total number of stroke patients transferred to hospitals **WITHIN** RAC-K this quarter		
3	Total number of stroke patients transferred to hospitals **OUTSIDE** RAC-K this quarter		
4	Total number of non-traumatic hemorrhages		
5	Number of Transient Ischemic Attacks (TIA) with symptom onset < 8 hours prior to ED arrival		
6	Number of non-traumatic hemorrhages with symptom onset < 8 hours prior to ED arrival		
7	Number of ischemic stroke (infarcts) with symptom onset < 8 hours prior to ED arrival		
	7a	How many infarcts had symptom onset > 3 hours but < 4½ hours prior to ED arrival	
	7b	How many infarcts had symptom onset < 3 hours prior to ED arrival?	
	7c	How many infarcts received tPA within > 3 hours but < 4½ hours of symptom onset?	
	7d	How many symptomatic hemorrhages occurred with tPA use?	
	7e	How many infarcts with symptom onset < 4½ hours prior to ED arrival met EXCLUSION CRITERIA FOR tPA?	
8	How many infarcts or hemorrhages were transferred to a comprehensive or primary stroke center?		
	8a	Of the number in 8, how many received tPA before transfer?	
9	Intrafacility time > 90 minutes prior to transfer to higher level of care		
10	Total number of deaths due to stroke		

Specific Occurrence Report

Age:	Gender:	Chart Identification #:

Type of Stroke:

☐ Transient Ischemic Attack (TIA) ☐ Hemorrhagic ☐ Ischemic

Occurrence:

☐ Transfer outside RAC-K ☐ Transfer declined by patient / family ☐ tPA declined by patient / family
☐ Transfer denied ☐ Transfer > 90 post arrival to ED ☐ Symptomatic hemorrhage with tPA
☐ Death due to stroke

Patient Outcome:

Provider Discussion:

Contributing Factors: □ Inadequate system guidelines/ protocols □ Patient left AMA □ Documented DNR
□ Hospital diversion □ Other:_____

Please do not fill in this section – For RAC-K PI Committee Review

___ No negative outcome
___ Minor Negative outcome
___ Significant system performance error
___ Major deviation from desired system performance
___ Unable to determine

Standard of Care Met? Yes / No
___ RAC-K guidelines followed
___ Minor deviation from RAC-K guidelines
___ Significant deviation form RAC-K guidelines
___ Major deviation from RAC-K guidelines
___ Unable to determine

Action Plan

___ No action needed
___ Review with hospital or EMS provider
___ Track and Trend
___ Education
___ RAC-K guideline review
___ Hospital / EMS action plan requested
___ Refer to Texas DSHS
___ Assign to workgroup
___ Request closed Executive Committee review
___ Other: _____

Please complete and return to:
Sherri Willocks, BSN, RN
Phone: 325.947.6643
Fax: 325.947.6975
sherri.willocks@sacmc.com

Performance Improvement Form
~ EMS ~

Date:_____

Name of Entity:_____

Person
Completing Report:_____

Reporting Period	Due Date
___ (Jan → Mar)	April 30
___ (Apr → Jun)	July 31
___ (Jul → Sep)	Oct 31
___ (Oct → Dec)	Jan 31

Performance Improvement Criteria / Indicators		
1	Total number of stroke patients transported this quarter (including transfers)	
2	Total number of stroke patients transferred to hospitals **WITHIN** RAC-K this quarter	
3	Total number of stroke patients transferred to hospitals **OUTSIDE** RAC-K this quarter	
4	Total number of patients refusing transport to higher level of stroke center	
5	Total "bypass" occurrences this quarter	
6	Total number of deaths identified as probably due to stroke	
7	Total number of times transport time is > 30 minutes from scene departure to ED arrival	
8	Number of times Air Medical Services requested but unable to respond this quarter.	

Specific Occurrence Report		
Age:	Gender:	Chart Identification #:
Type of Stroke: ☐ Transient Ischemic Attack (TIA) ☐ Hemorrhagic ☐ Ischemic		
Occurrence: ☐ Transport time > 30 minutes from scene departure to ED arrival ☐ Transfer outside RAC-K ☐ Transport to higher level declined by patient / family ☐ Death due to stroke		
Patient Outcome:		
Provider Discussion:		
Contributing Factors: □ Inadequate system guidelines/ protocols □ Documented DNR □ Hospital diversion □ Other:_____		

Please do not fill in this section – For RAC-K PI Committee Review	
___ No negative outcome ___ Minor negative outcome ___ Significant system performance error ___ Major deviation from desired system performance ___ Unable to determine	Standard of Care Met? Yes / No ___ RAC-K guidelines followed ___ Minor deviation from RAC-K guidelines ___ Significant deviation form RAC-K guidelines ___ Major deviation from RAC-K guidelines ___ Unable to determine
Action Plan ___ No action needed ___ Review with hospital or EMS provider ___ Track and Trend ___ Education ___ RAC-K guideline review	____Hospital / EMS action plan requested ____ Refer to Texas DSHS ____ Assign to workgroup ____ Request closed Executive Committee review ____ Other: _____

Please complete and return to:

Sherri Willocks, BSN, RN
Phone: 325.947.6643
Fax: 325.947.6975
sherri.willocks@sacmc.com

Guidelines

Desired Response for tPA administration hi-lighted	YES	NO
1. Age 18 or older		
2. Time last seen normal well established to be less than 180 minutes before treatment would begin.		
3. Clinical diagnosis of ischemic stroke causing a potentially disabling neurological deficit defined as: impairment of language, gait, motor function, cognition, gaze, and/or vision; or neglect		
4.CT scan rules out hemorrhage		
5. Patient has: a. only minor stroke symptoms b. major symptoms which are rapidly improving by the time treatment would begin		
6. Informed consent unavailable.		
7. History of or evidence of intracranial neoplasm, arteriovenous malformation or aneurysm.		
8. Patient has a clinical presentation that suggests Subarachnoid hemorrhage, even if the initial CT scan is normal.		
9. Patient is lactating or known or suspected to be pregnant.		
10.Patient has: a. Platelet count less than 100,000 b. INR greater than 1.7 **AND** is taking an oral anticoagulant c. Patient has received heparin within 48 hours and has an elevated PTT.		
11. Patient has had major surgery in the previous 14 days **or** Patient has evidence of active non-menstrual bleeding or acute trauma (fracture) on exam.		
12. Patient has history of GI or urinary tract hemorrhage in previous 21 days.		
13. Patient has had arterial puncture at a non-compressible site or a lumbar puncture or any spinal epidural injection in the previous 7 days.		
14. On repeated measurement, patient has a systolic BP > 185 or diastolic BP > 110 at the time treatment is to begin.		
15. Patient has a history of stroke, MI or head trauma in the previous 3 months or has ever had an intracranial hemorrhage.		
16. Blood glucose less than 50		
17. Patient has clinical presentation consistent with post MI pericarditis.		
18. Patient had a seizure at onset of stroke and lacks clinical evidence of ischemic stroke, such as early ischemic changes on CT		
19. CT shows evidence of new hypodensity greater than 1/3 of MCA territory.		
20. Patient is menstruating or has dysfunctional uterine bleeding		

Additional Checklist of Absolute Exclusion Criteria for Patients presenting with acute ischemic stroke between 3 and 4.5 hours

Desired Response for tPA administration hi-lighted	YES	NO
1. Patient is > 80 years old		
2. Patient is on Coumadin (regardless of INR)		
3. Patient has NIH > 25		
4. Patient has history of diabetes *and* stroke		

STROKE FACILITY GUIDELINES BASED ON STROKE LEVEL

Stroke Level A – Symptom onset < 4½ hours

IF UNABLE TO COMPLETE ANY ITEM BELOW, IMMEDIATE TRANSFER TO A PRIMARY STROKE CENTER IS RECOMMENDED

- ❑ STAT non-contrast CT Head
- ❑ Time to CT: _____ (Door to CT < 25 min)
- ❑ Time CT resulted: _____ (Door to results < 45 min)
- ❑ STAT ACCU-check: _____
- ❑ STAT EKG & continuous cardiac monitoring. Vital signs every 15 minutes w/ neuro checks.
- ❑ O_2 _____ Lpm, via nasal cannula
- ❑ Ensure 2 IV lines
- ❑ STAT lab: CBC, CMP, PT/PTT (Door to results < 45 min)
- ❑ NIHSS Score: _____
- ❑ Review Inclusion Criteria
- ❑ Review Exclusion Criteria
- ❑ Initiate tPA Administration set
- ❑ Review CUT-OFF TIME, consider administration of Intra-Arterial tPA or MERCI
- ❑ Prepare for IMMEDIATE transfer to Primary Stroke Center

Stroke Level B – Symptom onset 3-8 hours

IMMEDIATE TRANSFER TO PRIMARY STROKE CENTER IS RECOMMENDED

- ❑ NIHSS Score: _____
- ❑ STAT ACCU-check: _____
- ❑ Ensure 2 IV lines (however, do not delay transfer
- ❑ Prepare for IMMEDIATE transfer to Primary Stroke Center

Stroke Level C – Symptom onset > 8 hours

- ❑ STAT non-contrast CT Head
- ❑ Time to CT: _____ (Door to CT < 60 min)
- ❑ Time CT resulted: _____ (Door to results < 120 min)
- ❑ STAT ACCU-check: _____
- ❑ STAT EKG & continuous cardiac monitoring. Vital signs every 15 minutes w/ neuro checks.
- ❑ O_2 _____ Lpm, via nasal cannula
- ❑ Ensure 2 IV lines
- ❑ STAT lab: CBC, CMP, PT/PTT (Door to results < 45 min)
- ❑ NIHSS Score: _____
- ❑ Admission/Transfer

CVRAC PREHOSPITAL TRANSPORT GUIDELINES FOR STROKE

SUSPECTED STROKE

Assessment Guidelines:

- Cincinnati Stroke Scale
  - Facial Droop
  - Arm Drift
  - Abnormal Speech
- Complete Vital Signs
- Blood Glucose
- 12-Lead ECG
- Thrombolytic Checklist
- Time "last seen normal"
- Onset S/S

*Consider other etiologies such as hypoglycemia and seizure.

Minimum Treatment Guidelines:

- Oxygen 2-4 L/min
- IV NS TKO (as per skill level)
- Consider antihypertensive agent for blood pressures above 220/110
- Rapid transport to appropriate facility as indicated.
- Divert to the closest hospital for airway or patient instability.
- Consider Air Medical transport for patient deterioration and decrease

Transport decision should be based on time of onset as appropriate.

Consider Air Medical Transport to decrease transport time.

Less than 8 hours

↓

Closest Level 1 Stroke Facility (Recommended)
or
Shannon Medical Center
or
Closest Level 2 Faciltiy

Beyond 8 hours

(Or undetermined time of onset)

↓

Non-emergency transport to Level 1 or 2 Stroke Center recommended

*This patient is outside the window for reperfusion.

Sample Stroke Record Review Form

Name:_____ **Medical Record #:**_____

Admit Date:_____ **Discharge Date:**_____

Pre-Hospital	Yes	No	N/A
Hospital Transfer? Yes / No Transferring Hospital:_____ Transport Agency:_____			
Absence of ambulance report on medical record for patient transported by pre-hospital EMS personnel.			
Absence of Cincinnati Prehospital Stroke Scale with documented findings as normal or abnormal in all 3 elements			
Absence of documentation of established time "last seen normal"			
Absence of documentation of established time of onset of stroke like signs / symptoms			
Absence of documentation of blood glucose			
Emergency Department	**Yes**	**No**	**N/A**
ED physician not present within 10 minutes of patient presentation with stroke like signs / symptoms			
Absence of NIHSS			
Incomplete diagnostic workup			
Time from patient arrival to "Back from CT" > 25 minutes			
Time of "CT results notified to ED physician" > 45 minutes			
Absence of tPA eligibility checklist			
ED length of stay > 180 minutes			
Thrombolytic Therapy	**Yes**	**No**	**N/A**
IV thrombolytic started > 60 minutes from patient arrival			
IV thrombolytic started > 4½ hours from "last time normal"			
Incomplete vital signs (V/S q 15 min.; NIHSS q 30 min. X 6 hrs; GCS hourly) in patient receiving thrombolytic			
Absence of consent form when tPA given			
Absence of documented reason no tPA given			
Admissions	**Yes**	**No**	**N/A**
Admitted to non-stroke unit			
Absence of Neurological Consultation			
Absence of DVT screen			
Complications / Hemorrhage from tPA administration			
Stroke death			

Transfers	Yes	No	N/A
Hospital Transfer? Yes / No Receiving Hospital:_____			
Delay in transfer > 30 minutes after acceptance for patient being transported by ground EMS			
Delay in transfer > 60 minutes after acceptance for patient being transported by Air EMS			
Patient transferred to non-designated facility without justified documentation			

Notes:_____

❑ Refer to Peer Review ❑ Refer to Deparment Manager ❑ Refer to Stroke Medical Director ❑ Refer to CVRAC Stroke / PI committee	**Outcome:**

_____ _____

Record Reviewed By (signature) Date

_____ _____

Stroke Medical Director Review (signature) Date

Loop Closure Date:_____

CVRAC Hospital Questionnaire for Stroke Readiness and Compliance

Facility: _____

Main Number: _____ FAX: _____

Address: _____

Total Bed Capacity: _____ Average Daily Census: _____

Stroke Medical Director: _____

ED Director: _____

Administrator: _____

Stroke Coordinator: _____

Stroke Designation: ☐ In active pursuit ☐ Not designated @ this time
☐ Do not plan to "designate"

Facility Level Capability: (Level of support based on designation criteria even if not designated or planning to designate)

- ☐ Level 1 – Comprehensive Stroke Center
- ☐ Level 2 – Primary Stroke Center
- ☐ Level 3 – Support Stroke Facility

	Yes	No	Comments
Do you have a physician in the ED available 24/7 or on call for arrival within 30 minutes if not on site?			
Do you have a Hospital Based EMS service?			
Do you have 24 hour CT Scan Capability?			
Can you get a brain CT within 20 min of pt's arrival to the ED?			
Can you get a CT interpretation within 45 min of pt's arrival to ED?			
Does your hospital have interventional radiology?			
Does your hospital participate in tele-neurology?			
Do you have neurosurgery available 24/7?			
Can your lab have these results completed within 30 minutes:			
CBC			
Complete Metabolic Profile			
PT/PTT/INR			
Do you have documented personnel training in stroke?			

	Yes	No	Comments
Do you have a written protocol outlining stroke education?			
Do you have annual training in "Stroke Awareness: Signs and Symptoms" for personnel?			
Do you have personnel currently certified in administration of NIHSS for the evaluation of the acute stroke patient:			How many?_____
Do you have written Stroke Care Protocols?			
Does your facility administer tPA or thrombolytics?			
Do you have written protocols for administering thrombolytics?			
Do you utilize the tPA checklist prior to administering tPA?			
Do you have written protocols to include transport or communication criteria with collaborating / accepting Level 1 or 2 center?			
Do you have written transfer agreements with an EMS provider allowing stroke patients to be treated as priority one / emergent?			
Do you have written transfer agreements with certified Stroke Centers or facilities in active pursuit of Level 1 or 2 designation?			
Do you have a system to QI stroke cases?			
Do you provide any public awareness activities regarding stroke?			