

Instructor Lesson Plan

Stroke: A Continuing Education Program for New Mexico First Responders

1.0 CECs: ALS Medical

This program was developed by the University of New Mexico
EMS Academy with grant funding from the New Mexico
Department of Health, EMS Bureau

Special thanks to the following contributors:

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Objectives:

At the end of this lesson the participant should be able to:

- Value the role EMS providers play in recognition and management of the stroke patient.
- Outline the contribution of each component of a comprehensive, statewide stroke care system.
- Describe the on-going efforts of the New Mexico Stroke Task Force in the development of a comprehensive, statewide stroke care system.
- Advocate the continuing development of a comprehensive statewide stroke care system.
- Describe the anatomy and physiology of the brain, including cerebral circulation.
- Describe risk factors for stroke.
- Explain the pathophysiology of stroke.
- Recognize signs and symptoms of stroke.
- Obtain the relevant history of a patient with signs and symptoms of stroke.
- Perform a specific stroke assessment, using an approved stroke assessment scale
- Acknowledge the importance of determining the time of onset of stroke signs and symptoms.
- Recognize stroke as a treatable condition requiring expeditious transport to an appropriate medical facility.
- Make appropriate transport decisions for patients with signs and symptoms of stroke, to include limiting scene time and selecting the most appropriate destination and mode of transport.
- Provide proper and complete prehospital care of the patient with signs and symptoms of stroke.
- Describe the capabilities of area medical facilities with regard to stroke care.
- Describe in-hospital treatments available for stroke care.
- Recognize the role that EMS providers can play in educating family, friends, and the public about stroke.

Time Allotted for Lesson:

1.0 hours

Instructor Preparation:

The instructor must be knowledgeable in anatomy and physiology of the nervous system, pathophysiology of stroke, and current standards for prehospital stroke management. The instructor should review a primary EMS education text as necessary. Determine local protocols and operations procedures for management of patients with suspected stroke and seek current research related to the topic.

Suggested Instructor Resources:

New Mexico Stroke Task Force Report:

http://www.health.state.nm.us/pdf/Report-Stroke_The-Challenge-09-2004.pdf

National Institute of Neurological Disorders and Stroke:

<http://www.ninds.nih.gov/>

National Stroke Association:

<http://www.stroke.org/site/PageServer?pagename=HOME>

American Stroke Association:

<http://www.strokeassociation.org/presenter.jhtml?identifier=1200037>

New Mexico EMS Treatment Guidelines:

http://164.64.80.7/ipems.com/treatguide/TREATMENT_GUIDELINES.pdf

Materials & Training Equipment Needed:

Instructor CD with PowerPoint slides, computer, projection equipment and a microphone for large rooms.

Copies of the participant handout.

Evaluation

Administer the pre-course quiz prior to the presentation. If possible, have the quizzes graded in order to place focus on areas of participant difficulty.

Administer the post-course quiz at the end of the presentation.

Slide	Content	Instructor Notes
1	Title slide	Make introductions and announcements as necessary. Take care of any administrative tasks such as attendance rosters, etc.
2	<p>Introduction</p> <p>Stroke is a major health issue in the U.S., including NM Many strokes can be treated, but:</p> <p><i>There are numerous missed opportunities for treatment of stroke!</i></p>	This program was developed to address EMS personnel educational needs as a step in developing a comprehensive stroke treatment center in New Mexico.
3	<p>Introduction</p> <p>EMS providers have critical roles to play in public and patient education, recognition of stroke, and appropriate clinical decision-making, including rapid transport to the most appropriate facility.</p>	
4	<p>Program Goal</p> <p>The overall goal of this program is that First Responders recognize stroke as a treatable condition requiring expeditious transport to an appropriate medical facility.</p>	To meet this goal, the program will cover a number of topics.

Slide	Content	Instructor Notes
5	<p>Overview</p> <ul style="list-style-type: none"> ▪ Changed views on time to treatment ▪ Epidemiology of stroke ▪ NM Department of Health report on stroke ▪ The NM Stroke Advisory Committee ▪ Anatomy and physiology Pathophysiology ▪ Responsibilities of the EMS provider ▪ Assessment ▪ Early recognition ▪ Stroke awareness & prevention 	
6	<p>Traditional vs. Emerging View of Time</p> <p><u>Traditional view of time:</u></p> <p>Patient: wait & see if symptoms go away</p> <p>Prehospital providers: low priority for transport</p> <p>Acute care: give it time to resolve</p> <p>Traditional vs. Emerging View of Time</p> <p><u>Emerging view of time:</u></p> <p>Patient: stroke is a brain attack – call 911</p> <p>Prehospital providers: high priority for transport</p> <p>Acute care: stroke team, acute care protocols</p>	

Slide	Content	Instructor Notes
7	<p>Barriers to Early Intervention</p> <p>Delay in recognizing symptoms of stroke</p> <p>Delay in seeking medical attention</p> <p>Delay in transport</p> <p>Attitudes of health care professionals</p> <p>Emergency room issues</p>	<p>Class participation: ask, “How do you think each of these sources of delay can be addressed?”</p>
8	<p>Epidemiology of Stroke</p>	<p>Transition to epidemiology of stroke: the study of the patterns, causes, and control of stroke in groups of people.</p>
9	<p>Morbidity and Mortality</p> <p>700,000 new strokes/year in USA</p> <p>75% are ischemic – due to a blood clot, rather than hemorrhage in the brain</p> <p>One fourth of the 700,000 die</p> <p>Third leading cause of death</p> <p>Most common cause of disability in adults (60-70% of survivors have some disability)</p>	<p>Morbidity is the term used to refer to illness and mortality refers to death. They are often used in describing types of disease rates, eg morbidity rates (rates of illness) and mortality rates (death rates).</p>
10	<p>Stroke Mortality</p> <p>The mortality for patients who have been stabbed is less than 5% while the mortality due to stroke is 20%</p>	<p>An interesting perspective on the overall importance of causes of death.</p>
11	<p>Stroke: The Challenge A Report About Stroke in New Mexico 2004 Department of Health</p>	<p>Bringing it closer to home: the New Mexico Stroke Task Force Report is available on-line. The link is in the student handout.</p>

Slide	Content	Instructor Notes
12	<p>Stroke in New Mexico</p> <p>Albuquerque Stroke Knowledge Survey 500 Adults, March 2000</p> <p>62% could <u>not</u> name the most common stroke warning signs</p> <p>27% did <u>not</u> know to call 911</p> <p>36% did <u>not</u> know they can reduce their stroke risk</p> <p>46% did <u>not</u> know there are emergency treatments for stroke</p> <p>52% present at the time of a stroke did <u>not</u> call 911</p> <p>Nationally, only 1% list stroke as a major health concern</p>	<p>Class participation: ask, “What is your reaction to these findings?” “Are you surprised at the findings?” “What role do you think EMS providers have in addressing this issue?”</p>
13	<p>Stroke In New Mexico</p> <p>3rd most common fatal disease in NM</p> <p>Leading cause of long term disability</p> <p>Each day 2 New Mexicans die, 8 become stroke survivors</p> <p><i>1 of 3 people do not know they can reduce risk of stroke!</i></p>	

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14	<p>Stroke in New Mexico</p> <p>Only 0.4% of eligible stroke patients received thrombolytic therapy (NM Medical Review Association 2005)</p> <p>In 2002, an estimated \$65 million was spent on stroke hospital care in New Mexico – <i>excluding</i> MD charges & rehab costs</p>	
15	<p>2002 NM Statewide EMS Provider Stroke Survey</p> <p>45% could <u>not</u> define TIA correctly</p> <p>64% did <u>not</u> know time window for r-tPA</p> <p>47% think their stroke knowledge is inadequate</p>	<p>Class participation: ask, “What is your reaction to these findings?” “Are you surprised at the findings?”</p>
16	<p>Stroke Education for EMS</p> <p>Traditionally EMS has received minimal training</p> <p>EMS texts only cover superficially, as medical rather than cardiovascular problem</p> <p>Stroke patients given low dispatch priority</p> <p>Not always considered an emergency requiring rapid intervention and transport</p>	<p>The current National Standard Curriculum at the lower levels does not specifically include stroke.</p>

Slide	Content	Instructor Notes
17	<p>The Hospital Situation</p> <p>68% of NM hospitals surveyed have no standing orders for stroke patients</p>	
18	<p>Stroke Risk Factors & Prevention</p>	<p>Transition to risk factors.</p> <p>Prior to advancing to the next slide, ask participants how many stroke risk factors they can list.</p>
19	<p>Common Risk Factors for Stroke</p> <p>Hypertension Diabetes mellitus Cardiac disease Prior stroke or TIA Hypercholesterolemia Age (>55 yrs) Gender (male)</p>	
20	<p>Risk Factors for Stroke</p> <p>Race (African Americans have >twice the risk) Family history Hypercoagulative states Pregnancy Sickle cell disease Cancer</p>	<p>Hypercoagulative state: any condition that results in greater than normal blood clotting</p>
21	<p>Modifiable Risk Factors</p> <p>Smoking Diabetes Hypertension Obesity/high cholesterol Irregular heart beat Inactivity Drug abuse (cocaine, IV drug abuse) Excessive alcohol use</p>	<p>Class participation: ask, “What can people do to modify these risk factors?”</p>

Slide	Content	Instructor Notes
22	<p>Gender-Specific Risk Factors</p> <p><i>In 2006 over 100,000 women under 65 will have a stroke!</i></p> <ul style="list-style-type: none"> ▪ Migraines with aura ▪ Birth control pills, even low dose ▪ Clotting disorders ▪ Women who have had more than one miscarriage may be at higher risk for blood clots and stroke 	<p>Smoking contributes to an even higher risk of stroke in patients using hormonal birth control (pills, patch, ring, etc.), especially in women over 35.</p>
23	<p>Risk Factors - Hispanics</p> <ul style="list-style-type: none"> ▪ Hispanic population at high risk ▪ Cost of treating ischemic strokes in Hispanics was \$3.1 billion in 2005 ▪ Hispanics are twice as likely to develop ischemic strokes as non-Hispanic Caucasians ▪ Risk factors: inactivity, obesity, diabetes 	
24	<p>Stroke Prevention</p>	

Slide	Content	Instructor Notes
25	<p>Stroke Prevention - Lifestyle</p> <p>Diet Exercise Smoking cessation Weight control Control of diabetes Lowering cholesterol (statins are medications used to decrease blood cholesterol) Antihypertensives</p>	<p>Aspirin in Heart Attack and Stroke Prevention</p> <p>AHA Recommendation</p> <p>The American Heart Association recommends aspirin use for patients who've had a myocardial infarction (heart attack), unstable angina, ischemic stroke (caused by blood clot) or transient ischemic attacks (TIAs or "little strokes"), if not contraindicated. This recommendation is based on sound evidence from clinical trials showing that aspirin helps prevent the recurrence of such events as heart attack, hospitalization for recurrent angina, second strokes, etc. (secondary prevention). Studies show aspirin also helps prevent these events from occurring in people at high risk (primary prevention). The risks and benefits of aspirin therapy vary for each person.</p> <p>Source: http://www.americanheart.org/presenter.jhtml?identifier=4456 November 16, 2006</p>
26	<p>Anatomy & Physiology</p>	<p>Transition to anatomy and physiology.</p>

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27	<p>The Brain</p> <p>CEREBRUM Higher functions Two hemispheres</p> <p>Dominant side Speech Language Rational thinking</p> <p>Nondominant side Intuition/Insight</p>	<p>General functions of the cerebrum. Interruption of the blood supply to any of these areas affects the specific function of that area.</p>
28	<p>The Brain</p> <p>FRONTAL Reasoning and judgment</p> <p>PARIETAL Motor/sensory for opposite side</p> <p>CEREBELLUM Balance/posture</p> <p>BRAINSTEM Medulla controls respirations and heart rate</p>	<p>General functions of the cerebrum. Interruption of the blood supply to any of these areas affects the specific function of that area.</p>
29	<p>Brain Function</p> <p>Regulatory center Integrates and controls body functions</p> <p>Sensation Interprets sensory perceptions</p> <p>Seat of Consciousness Awareness of self and surroundings</p>	<p>Overall functions</p>

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30	Cerebral Circulation	<p>The internal carotid arteries provide circulation to the anterior portion of the brain and the vertebral arteries provide circulation to the posterior portion of the brain. The circle of Willis allows for some collateral circulation via communicating arteries.</p> <p>Obstruction of the anterior and posterior circulation are each associated with particular signs and symptoms of stroke.</p> <p>Obstruction of or bleeding from larger arteries closer to the vertebral and carotid arteries affect larger areas of the brain.</p>
31	Pathophysiology of Stroke	Transition to pathophysiology of stroke.
32	<p>Pathophysiology</p> <p>Stroke occurs when there is an interruption in blood flow to the brain due to obstruction or rupture of an artery supplying blood to the brain tissue</p> <p>Without blood supply, brain tissue begins to die in 4 minutes</p> <p>Signs and symptoms of a stroke depend on what part – and how much - of the brain is affected</p>	

Slide	Content	Instructor Notes
33	<p>Stroke</p> <p>Ischemic</p> <p style="padding-left: 40px;">Thrombotic</p> <p style="padding-left: 40px;">Embolic</p> <p>Hemorrhagic</p> <p style="padding-left: 40px;">Intracerebral</p> <p style="padding-left: 40px;">Subarachnoid</p>	<p>Ischemia: inadequate blood flow.</p> <p>Thrombus: (pl. thrombi), a solid mass formed from the constituents of blood within the blood vessels or the heart. Thrombi that form within the rapidly moving arterial circulation are composed largely of fibrin and platelets with only a few trapped red and white cells.</p> <p>Embolus: (emboli, pl.) - a detached intravascular solid, liquid or gaseous mass that is carried by the blood to a site distant from its point of origin, thus obstructing the flow of blood. Most (99%) arise from thrombi (thromboembolus). embolism - the sudden obstruction or blocking of a vessel by an embolus.</p> <p>Intracerebral: Within the cerebrum</p> <p>Subarachnoid: Beneath the arachnoid layer of the meninges.</p>
34	<p>Comparing Hemorrhage (aneurysm), Thrombus & Embolism</p>	

Slide	Content	Instructor Notes
35	<p>Transient Ischemic Attack</p> <p>By definition, symptoms resolve in < 24 hours</p> <p>Transient monocular blindness may be an indicator of TIA</p> <p>Significant predictor of future stroke risk</p> <p>4-10x increased risk after hemiparesis</p> <p>Risk greatest in first months after TIA</p> <p>Most strokes are NOT preceded by TIAs</p>	<p>EMS providers should not attempt to differentiate between a prolonged TIA and a stroke.</p>
36	<p>“Economy Class Syndrome”</p> <p>Association between long distance flying and stroke</p> <p>Less frequently had typical stroke risk factors</p>	<p>Heckman, JG et al. Heart 2006 Jan 31</p>
37	<p>The Chain of Survival</p>	<p>Transition to the Chain of Survival</p>

Slide	Content	Instructor Notes
38	<p>Elements of the Chain of Survival</p> <p>Detection – early recognition Dispatch – early EMS activation, prompt response Delivery – rapidly and to appropriate facility Door – ED triage Data – ED evaluation Decision – about potential therapies Drug therapy if appropriate</p>	
39	<p>Time is Brain</p> <p>According to Dr. Jeffrey Saver, director of the UCLA Stroke Center: ONE MINUTE = 1.9 billion neurons 7.5 miles of nerve fibers</p>	
40	<p>Time is Brain</p> <p>Each minute you wait, you lose close to 2 million brain cells</p> <p>A pea sized piece of brain dies for every 12 minutes that treatment is delayed</p>	
41	<p>Common Presenting Symptoms of Stroke</p> <p>Unilateral motor weakness (hemiparesis) Unilateral sensory loss Abnormal speech Vision loss or visual field deficit</p>	

Slide	Content	Instructor Notes
42	<p>Stroke Signs & Symptoms</p> <p>Sudden change in LOC</p> <ul style="list-style-type: none"> Confusion Loss of consciousness, syncope Seizure Coma <p>Inappropriate affect (emotion) – laughing, crying</p> <p>Dysphasia, aphasia</p>	<p>Dysphasia: an impairment of speech and/or of comprehension of speech.</p> <p>Aphasia: any of a large group of speech disorders involving defect or loss of the power of expression by speech, writing, or signs, or of comprehending spoken or written language, due to injury or disease of the brain or to psychogenic causes. Less severe forms are known as dysphasia. (Merck)</p>
43	<p>Stroke Signs & Symptoms</p> <ul style="list-style-type: none"> ▪ Weakness or paralysis of the side opposite the stroke ▪ Incoordination, falls ▪ Irregular pulse <ul style="list-style-type: none"> ○ Present in >50% of stroke patients ▪ High blood pressure <ul style="list-style-type: none"> ○ High blood pressure + slow pulse = Increased intracranial pressure 	
44	<p>Stroke Signs & Symptoms: Intracranial Hemorrhage</p> <p>New onset seizure may indicate intracranial hemorrhage</p> <p>Sudden, severe headache with no known cause</p> <p>“Worst headache I’ve ever had”</p>	
45	<p>Findings Occasionally Due to Stroke</p> <ul style="list-style-type: none"> ▪ Clumsiness/incoordination ▪ Sudden fall, especially if to one side ▪ Patient “found down” ▪ Dizziness ▪ Double vision ▪ Difficulty swallowing 	

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46	<p data-bbox="370 237 867 268">Other Causes of Signs & Symptoms</p> <ul data-bbox="418 310 818 451" style="list-style-type: none"> <li data-bbox="418 310 818 342">▪ Alcohol or drugs, overdose <li data-bbox="418 346 565 378">▪ Seizure <li data-bbox="418 382 565 413">▪ Trauma <li data-bbox="418 417 722 451">▪ Diabetic emergency 	<p data-bbox="893 237 1372 415">Class participation: ask, “How can you attempt to rule in/rule out some of these causes of altered mental status?” “Why would it be important to do so?”</p>
47	<p data-bbox="370 604 803 667">Rapid Assessment of the Stroke Patient</p>	<p data-bbox="893 604 1328 636">Transition to focus on assessment</p>
48	<p data-bbox="370 751 820 783">What is the “Standard of Care”?</p> <p data-bbox="370 825 852 961">Patients & EMS providers have the right to expect that acute care hospitals will offer rapid, appropriate treatment for acute stroke</p> <p data-bbox="370 1003 852 1119">Hospitals not able or choosing not to do so should make this policy clear to allow bypass to other institutions</p>	<p data-bbox="893 751 1339 856">The New Mexico Stroke Advisory Committee exists to promote a comprehensive stroke care system.</p>
49	<p data-bbox="370 1155 760 1186">How Strokes are Dispatched</p>	<p data-bbox="893 1155 1307 1444">After recognition of signs and symptoms by patient, family, or bystanders, it is critical that dispatchers be able to obtain as specific as possible information regarding potential for stroke. Possible stroke must become a priority call.</p>

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50	<p>Critical Issues to Determine on Scene</p> <p><u>Time of first symptom onset</u> When was patient last known to be normal? How does patient or witness know? Were symptoms present upon awakening?</p> <p><u>Written informed consent</u> If patient cannot give consent, encourage family member or legal guardian to accompany patient to ER</p>	<p>Class participation: ask, “Why are these issues important?”</p>
51	<p>Rapid Assessment</p> <p>ABC’s - oxygen Pertinent history Vital signs</p>	<p>Class participation: ask, “What steps are involved in the ABCs of a patient with a possible stroke?” “What are the concerns with airway and breathing?”</p> <p>Class participation: ask, “What does “pertinent history” mean?”</p>

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52	<p>Brief Neurological Assessment</p> <p>Level of consciousness: alert, drowsy, stupor, coma</p> <p>Speech abnormalities: repeat a sentence</p> <p>Facial asymmetry: smile</p> <p>Motor weakness Arm drift Grip Leg drift</p>	<p>Demonstrate the steps in the brief neurological assessment.</p>
53	<p>NM Stroke Assessment Tool</p>	
54	<p>Things to Avoid in Pre-Hospital Stroke Care</p> <ul style="list-style-type: none"> ▪ Glucose administration, except to patients with confirmed hypoglycemia ▪ Delays in transport 	
55	<p>Transport</p> <p>Do not delay transport of suspected stroke patients</p> <p>No more than 10 minutes on-scene</p>	<p>Class participation: ask, “As a first responder, what can you do to expedite transport?”</p>

Slide	Content	Instructor Notes
56	<ul style="list-style-type: none"> ▪ History ▪ Reassurance ▪ Oxygen ▪ Assume patient can hear, even if they cannot speak ▪ Manage seizures 	
57	<p>Advance Notification During Transport</p> <p>Update on patient status allows receiving facility to:</p> <ul style="list-style-type: none"> Assemble stroke team Clear CT scanner 	
58	<p>Transport by EMS</p> <p>Only half of stroke patients arrive at ED by ambulance Ambulance patients more likely to be evaluated by ED MD sooner</p>	<ul style="list-style-type: none"> ▪ 30 minutes for ambulance patients ▪ 34 minutes for walk in ▪ 55 minutes for public transportation <p>Stroke Journal Report Feb. 16, 2006 2006 American Stroke Assn Meeting Report Abstracts P45, P27</p>

Slide	Content	Instructor Notes
59	<p data-bbox="370 237 781 268">Features of a “Stroke Center”</p> <ul style="list-style-type: none"> <li data-bbox="370 310 683 342">▪ On call Stroke Team <li data-bbox="370 346 854 447">▪ Neurologists (or other physicians) with special interest, training, and expertise in stroke care <li data-bbox="370 451 808 483">▪ CT scans available at all times <li data-bbox="370 487 613 518">▪ MRI capability <li data-bbox="370 522 797 596">▪ Emergency access to cerebral angiography <li data-bbox="370 600 818 632">▪ Neurosurgeon available on call <li data-bbox="370 636 846 709">▪ Vascular neurosurgery or surgery expertise <li data-bbox="370 714 748 745">▪ Clinical research program 	<p data-bbox="893 237 1377 373">Allows rapid identification and rapid, advanced treatment of stroke, giving patients the highest possibility of complete recovery.</p>
60	<p data-bbox="370 1150 675 1182">Hospital Management</p> <ul style="list-style-type: none"> <li data-bbox="370 1224 610 1255">▪ TIME GOALS <li data-bbox="370 1260 781 1291">▪ Door to doctor - 10 minutes <li data-bbox="370 1295 781 1369">▪ Door to CT completion – 25 minutes <li data-bbox="370 1373 802 1404">▪ Door to CT read – 45 minutes <li data-bbox="370 1409 818 1440">▪ Door to treatment – 60 minutes <li data-bbox="370 1444 829 1476">▪ Neurology consult – 15 minutes <li data-bbox="370 1480 721 1512">▪ Neurosurgery – 2 hours <li data-bbox="370 1516 854 1547">▪ Admit to monitored bed – 3 hours 	

Slide	Content	Instructor Notes
61	<p data-bbox="370 237 784 268">ER Stroke Evaluation Targets</p> <ul data-bbox="418 310 857 594" style="list-style-type: none"> <li data-bbox="418 310 857 415">▪ Rapid assessment of all symptomatic patients with onset < 24 hours <li data-bbox="418 422 857 485">▪ CT scan started within 20 - 30 minutes of arrival <li data-bbox="418 491 857 594">▪ Treatment initiated (if appropriate) within 45 - 60 minutes of arrival 	
62	<p data-bbox="370 646 675 678">Hospital Management</p> <ul data-bbox="418 720 857 972" style="list-style-type: none"> <li data-bbox="418 720 857 867">▪ Intravenous thrombolytics – drugs that dissolve blood clots in cerebral blood vessels in thrombotic stroke <ul data-bbox="516 867 857 930" style="list-style-type: none"> <li data-bbox="516 867 857 930">○ tPA – tissue plasminogen activator <li data-bbox="418 936 857 972">▪ NOT for prehospital use 	
63	<p data-bbox="370 1083 805 1115">tPA Indications in Acute Stroke</p> <ul data-bbox="418 1157 857 1556" style="list-style-type: none"> <li data-bbox="418 1157 857 1220">▪ First FDA approved acute stroke treatment <li data-bbox="418 1226 857 1262">▪ CT negative for hemorrhage <li data-bbox="418 1268 857 1331">▪ Treat within 3 hours of symptom onset <li data-bbox="418 1337 857 1442">▪ Not used for patients with isolated, mild or rapidly improving deficits <li data-bbox="418 1449 857 1556">▪ Contraindicated in patients with increased bleeding risks or uncontrolled hypertension 	

Slide	Content	Instructor Notes
64	<p>Issues for Community Hospitals</p> <p>Community hospitals may not have the facilities or personnel to quickly assess and treat stroke patients</p>	<ul style="list-style-type: none"> ▪ Availability of CT scanning and interpretation at all times ▪ Availability of ICU or monitored bed ▪ Access to neurology / stroke expertise ▪ Availability of neurosurgery support to manage intracranial hemorrhage complications ▪ Availability of transport to stroke centers
65	<p>Stroke Rehabilitation</p>	<p>Transition to Stroke Rehabilitation: Importance of returning to as high a level of functioning as possible.</p>
66	<p>Permanent disability may occur without prompt intervention:</p> <p>Cognitive impairment Thinking and processing information</p> <p>Physical disability Weakness, paralysis</p> <p>Aphasia Difficulty or inability in speaking or understanding language</p>	<p>Importance of physical, occupational, speech therapy in the community.</p> <p>Need for support: local stroke support groups.</p>
67	<p>Rehabilitation</p> <ul style="list-style-type: none"> ▪ Speech therapy ▪ Physical therapy ▪ Occupational therapy ▪ May have permanent disability 	<p>Rural issues not only with prehospital, emergency, and acute care, but with rehabilitation services, as well.</p>
68	<p>New Mexico Stroke Advisory Committee</p>	<p>Transition: NM Stroke Advisory Committee</p>

Slide	Content	Instructor Notes
69	<p>The NM Stroke Advisory Committee</p> <p>Exists to advise the EMS Bureau and NM Department of Health on the development and implementation of a comprehensive formal system for stroke care.</p>	<p>Importance of coordinating efforts and different aspects of the stroke care continuum.</p>
70	<p>Conclusion</p> <ul style="list-style-type: none"> ▪ Stroke can be prevented with lifestyle changes ▪ Time = Brain ▪ Know how to recognize ischemic and hemorrhagic stroke ▪ Stroke is a high priority for transport: no more than 10 minutes on scene ▪ ED notification ▪ Promote the Stroke Chain of Survival and Recovery in your community 	<p>Challenge: “What can you do to make a difference?”</p>
71	<p>Acknowledgements</p> <p>This program was developed by the University of New Mexico EMS Academy with grant funding from the New Mexico Department of Health, EMS Bureau</p> <p>Special thanks to the following contributors:</p> <p>Sheran Dodd, EMT-I Glenn Graham, MD Dave Johnson, MD Winnie Maggore, JD</p>	

