VV. STROKE: NEUROLOGICAL EMERGENCIES

1. Inclusion Criteria

   Patient may present with numbness or weakness (often on one side only), difficulty speaking, sudden onset of dizziness or loss of balance, blurred vision (including intermittent loss of vision in one or both eyes, which may have resolved upon arrival of EMS), or a severe, unexplained headache. May be accompanied by seizures or altered mental status.

The Cincinnati Prehospital Stroke Scale

(Kothari R, et al. Acad Emerg Med 1997; 4:9866-990.)

Facial Droop (have patient show teeth or smile):
- Normal – both sides of face move equally
- Abnormal – one side of face does not move as well as the other side

Arm Drift (patient closes eyes and holds both arms straight out for 10 seconds):
- Normal – both arms move the same or both arms do not move at all (other findings, such as strength of grip, may be helpful)
- Abnormal – one arm does not move or one arm drifts down compared with the other

Abnormal Speech (have the patient say "you can't teach an old dog new tricks"):
- Normal – patient uses correct words with no slurring
- Abnormal – patient slurs words, uses the wrong words, or is unable to speak

Posterior Cerebellar Assessment

Balance and eyes: patient complains of sudden onset of loss of balance or dizziness, or has sudden vision loss (including intermittent loss of or blurred vision) indicates a stroke affecting the posterior cerebellar circulation.

If Posterior Cerebellar Assessment OR Cincinnati Prehospital Stroke Scale is positive, perform the Los Angeles Motor Scale (LAMS). Relay LAMS score to the receiving hospital during Stroke Alert notification.

The Los Angeles Motor Scale (LAMS)

Facial droop	
Absent	0
Present	1
Arm drift	
Absent	0
Drifts down	1
Falls rapidly	2
Grip strength	
Normal	0
Weak grip	1
No grip	2

VV. STROKE: NEUROLOGICAL EMERGENCIES (Continued)

2. Treatment
   a) Position patient with head elevated at 30 degrees.
   b) If the patient has a positive Posterior Cerebellar Assessment OR Cincinnati Pre-hospital Stroke Scale AND can be delivered to the hospital **within 20 hours** of when patient was last known well, transport the patient to the closest Designated Acute Stroke Ready, Primary, or Comprehensive Stroke Center. If there is not one within 30 minutes, then go to the nearest hospital.

ALERT

IF PATIENT MEETS ABOVE STROKE CRITERIA, THIS PATIENT IS A PRIORITY 1 PATIENT AND REQUIRES NOTIFICATION OF THE NEAREST DESIGNATED ACUTE STROKE READY, PRIMARY, OR COMPREHENSIVE STROKE CENTER AS SOON AS POSSIBLE TO ALLOW HOSPITAL PREPARATION. DURING THE CONSULTATION WITH THE RECEIVING FACILITY, THE Clinician SHALL USE THE VERBIAGE, "STROKE ALERT WITH A LAST KNOWN WELL TIME OF XX:XX" AS THE UNIVERSAL METHOD OF NOTIFYING THE FACILITY THAT THE PATIENT MEETS THE STROKE INCLUSION CRITERIA.

CLINICIANS SHOULD OBTAIN AND DOCUMENT A CONTACT TELEPHONE NUMBER FOR ONE OR MORE INDIVIDUALS WHO HAVE DETAILS ABOUT THE PATIENT'S MEDICAL HISTORY SO THAT THE PHYSICIAN MAY OBTAIN AND VALIDATE ADDITIONAL PATIENT INFORMATION

WHILE STROKES DURING PREGNANCY OR SHORTLY AFTER GIVING BIRTH ARE RARE, THERE HAS BEEN A SIGNIFICANT RISE REPORTED IN THE LITERATURE. MOTHERS-TO-BE AND POSTPARTUM MOTHERS HAVE AN INCREASED RISK.

   c) Use glucometer and treat if glucose less than 70 mg/dl.
   d) Establish IV access with LR.
   e) If the patient is hypotensive, obtain medical consultation.
   f) Consider obtaining blood sample using closed system.
   g) Do not treat hypertension in the field.

ALERT

THE CAUSES OF STROKES IN CHILDREN ARE DIFFERENT FROM ADULTS. WHILE STROKES ARE UNCOMMON IN CHILDREN, THEY DO OCCUR AND ARE MOST OFTEN CAUSED BY ONE OF THE FOLLOWING CONDITIONS: CONGENITAL HEART DEFECTS, INFECTIONS (INCLUDING CHICKEN POX, MENINGITIS, OR ENCEPHALITIS), BRAIN INJURY, OR BLOOD DISORDERS (SUCH AS SICKLE CELL DISEASE). STROKES IN CHILDREN ARE MOST OFTEN SEEN IN INFANTS BUT DO OCCUR IN CHILDREN OF ANY AGE.

CHILDREN WITH STROKE SYMPTOMS WHO HAVE NOT REACHED THEIR 18TH BIRTHDAY SHALL BE TREATED UNDER THE PEDIATRIC PROTOCOL. CONSULT WITH A LOCAL BASE STATION AND A PEDIATRIC BASE STATION TO ARRANGE TRANSPORT TO A MARYLAND PEDIATRIC TRAUMA CENTER.

VV. STROKE: NEUROLOGICAL EMERGENCIES (Continued)

h) Administer oxygen at 2–6 liters via nasal cannula (unless hypoxic or in respiratory distress).

i) Position patient with head elevated at 30 degrees.

j) If a child presents with a SUSPECTED stroke (e.g., sickle cell patient), consult with the nearest Pediatric Base Station and local Base Station. Clinicians should obtain and document a contact telephone number for one or more individuals who have details about the patient's medical history so that the physician may obtain and validate additional patient information.

k) Use glucometer and treat accordingly.
(See Section IV, Glucometer Protocol.)

l) Establish IV access with LR.

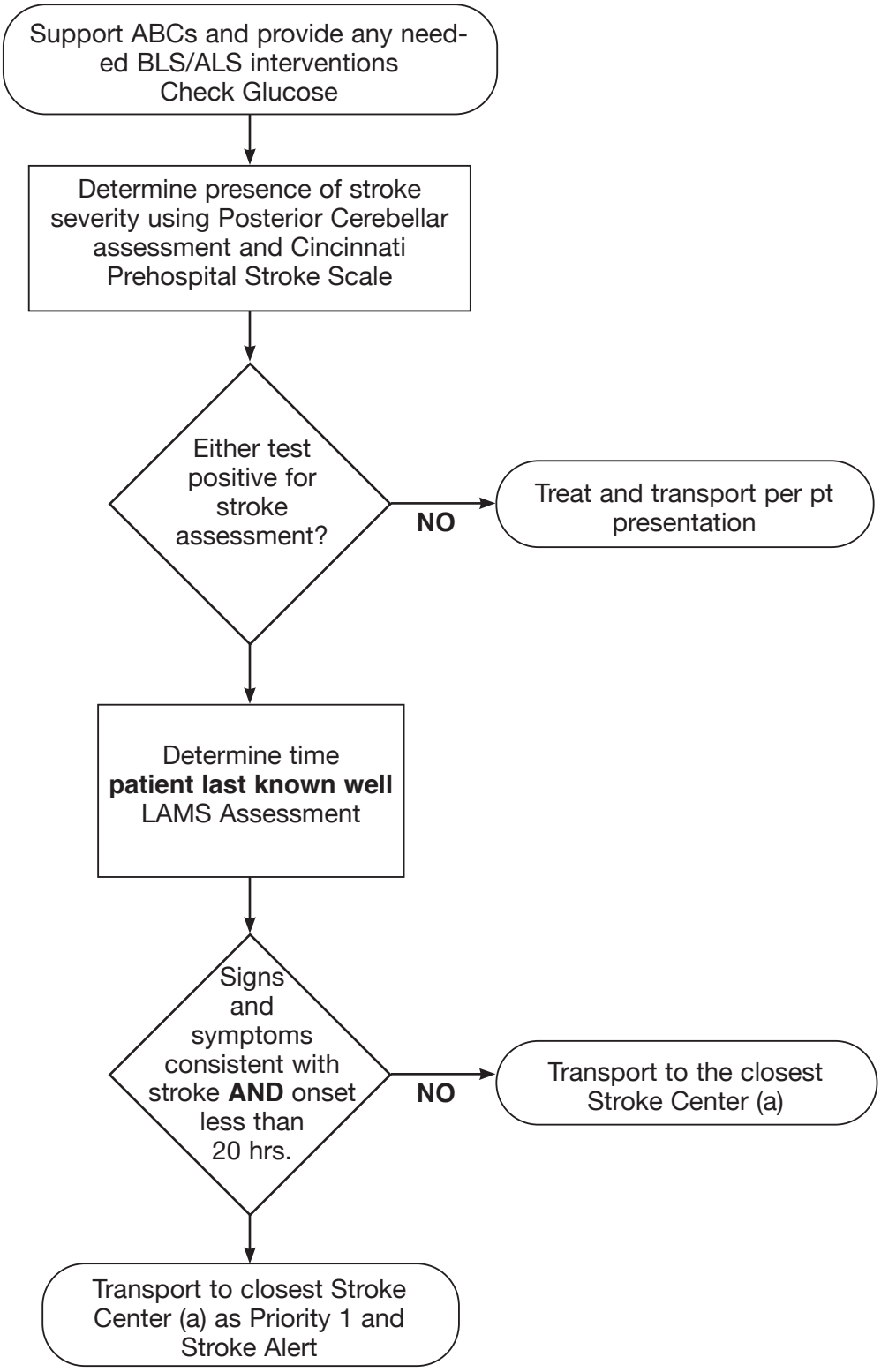
m) If the patient is hypotensive, obtain medical consultation.

n) Consider obtaining blood sample using closed system.

o) Do not treat hypertension in the field.

VV. STROKE: NEUROLOGICAL EMERGENCIES (Continued)

EMS STROKE ALGORITHM



(a) Designated Acute Stroke Ready, Primary, or Comprehensive Stroke Center