Acute Ischemic StrokeThrombolytic Checklist

Inclusion Criteria

***** ALL of these items must be checked ˆYES˜ for patient to be a thrombolytic candidate:*****

Yes No

❒ ❒ Age 18 or older.

❒ ❒ Clinical diagnosis of ischemic stroke causing a measurable neurologic deficit.

Date/time CT Head performed: _____

Date/time CT Head interpreted: _____

Interpreted by:_____

❒ ❒ Onset of symptoms of ischemic stroke within 4.5 hours of the time to initiation of treatment with intravenous t-PA.

Date/time stroke symptom onset:_____

Contraindications

***** Use extreme caution if treating with IV tPA in the presence of documented contraindication *****

Yes No

❒ ❒ SBP greater than 185 or DBP greater than 110mmHg (despite measures to reduce it)

❒ ❒ CT findings (ICH, SAH, or major infarct signs)

❒ ❒ Platelets less than 1000,000, PTT greater than 40 sec after heparin use, PT greater than 15 or INR greater than 1.7, or known bleeding diathesis

❒ ❒ Recent surgery/Trauma (less than 15 days)

❒ ❒ Seizure at onset (with postictal impairment)

❒ ❒ Active internal bleeding (less than 22 days)

❒ ❒ Recent intracranial or spinal surgery, head trauma, or stroke (less than 3 months)

❒ ❒ History of intracranial hemorrhage, brain aneurysm, vascular malformation, or tumor

❒ ❒ Suspicion of subarachnoid hemorrhage

Warnings

** ***Some of these contraindications may increase the risk of unfavorable outcomes, but are not necessarily a contraindication to treatment***

Yes No

❒ ❒ Stroke severity - too mild

❒ ❒ Rapid improvement

❒ ❒ Stroke severity - too severe (e.g. NIHSS greater than 22) [Many centers do not exclude patients based on an increased NIHSS alone]

❒ ❒ Glucose less than 50 or greater than 400mg/dl

❒ ❒ Life expectancy less than 1 year, severe co-morbid illness, or Comfort Measures Only on admit

❒ ❒ Increased risk of bleeding due to: Subacute bacterial endocarditis, Hemostatic defects including those secondary to severe hepatic or renal disease, Diabetic hemorrhage retinopathy, or other hemorrhagic ophthalmic conditions, Septic thrombophlebitis or occluded AV cannula at seriously infected site, Patients currently receiving oral anticoagulants (e.g. Warfarin sodium)

❒ ❒ Pregnancy

❒ ❒ Advanced age

❒ ❒ Documented left heart thrombus

Completed by:_____ Date/Time _____

Acute Stroke Orders

STAT ☐
PEDS ☐

Emergency Department Orders

Allergies_____

1. Record time of stroke onset (last time patient seen without stroke symptoms): _____
   Date/Time
2. Complete fast stroke exam. If positive notify "Stroke Team" via page and Swedish Telestroke Team (206-405-7317)
3. Complete thrombolytic checklist and neurologic assessment using NIHSS Stroke Symptom Scale
4. Vital signs assessment x 1, then blood pressure every 15 minutes.
5. STAT EKG.
6. STAT "Telestroke" CT Time ordered:_____
7. STAT blood for:
   - ❖ CX-8 via iSTAT
   - ❖ CBC with platelet count
   - ❖ INR
   - ❖ Serum HCG (for women of child bearing years)
8. RN or Physician to perform first **NIHSS**, after patient returns from CT
9. IV Access: NS or 0.45 NS at 50 cc/hr.
10. NPO until patient passes bedside swallow evaluation
11. Complete Clinical Swallow Assessment prior to oral intake. Time done:_____

t-PA for Ischemic Stroke Orders

1. Second IV access: in opposite arm, saline lock (18 gauge in anticubital fossa)
2. Repeat **NIHSS** just prior to starting t-PA. If score has improved, hold t-PA.
3. Administer t-PA as ordered STAT Time ordered:_____
   a. Patient weight _____kg
   b. t-PA total dose 0.9 mg/kg = _____mg (max total dose 90mg)
      Bolus: 0.1 x total dose = _____mg over 1 minute (max 9mg)
      Infusion: 0.9 x total dose = _____mg over 60 minutes (max 81mg)
   c. Administer via infusion pump, do not administer with any other medications
4. Vital signs, neuro assessment every 15 minutes for 2 hours after start of t-PA.
5. No heparin, antiplatelet drugs, or warfarin for 24 hours from start of t-PA infusion.
6. Avoid venous or arterial puncture and foley catheter
7. Transfer to Intensive Care Unit

Blood Pressure Control Orders

Maintain systolic BP < 185 and diastolic BP < 110
Blood pressure goals: SBP _____DBP_____
Monitor blood pressure every 15 minutes during antihypertensive therapy

- ❑ Sodium nitroprusside infusion at 0.1 mcg/kg/min and titrate to BP goal (for DBP > 140 mmHg)
- ❑ Labetalol 10 mg IV over 1-2 minutes, may repeat and/or double dose every 10 minutes up to 300 mg
- ❑ Labetalol continuous infusion 2 mg/min and titrate to BP goal (max 8 mg/min)

Nurse Initials _____ Physician Initials _____

STAT
PEDS

t-PA for Acute Ischemic Stroke Orders

Allergies_____

Intensive Care Unit Ischemic Stroke Orders

1. Continue Emergency Department Thrombolytic Therapy for Ischemic Stroke Orders for t-PA infusion and monitoring until two hours after start of t-PA infusion.
2. Vital signs and neurologic assessment (LOC, arm/leg weakness) every 30 min for 6 hours, then every 60 min for 16 hours after start of t-PA.
3. Perform **Stroke Symptom Scale** per NIH Stroke Scale Assessment Form
4. Bleeding precautions:
   - ❖ Check puncture sites for bleeding or hematomas.
   - ❖ Apply digital pressure or pressure dressing to active compressible bleeding sites.
   - ❖ Evaluate urine, stool, emesis, or other secretions for blood.
   - ❖ Perform Hemoccult testing if there is evidence of bleeding.
5. Call Dr. _____, pager # _____ immediately for evidence of bleeding, neurologic deterioration, or vitals signs outside the following parameters:
   - ❖ Systolic BP > 185 or < 110 mmHg
   - ❖ Diastolic BP > 105 or < 60 mmHg
   - ❖ Pulse < 50 bpm
   - ❖ Respirations > 24/min
   - ❖ Decline in neurologic status or worsening stroke signs
6. 0.45NS or NS IV to keep open at 50 cc/hr x 24 hours.
7. Oxygen _____
8. Continuous cardiac monitoring.
9. I's and O's, daily weights.
10. NPO except for meds x 24 hours.
11. Bed rest.
12. Medications:
    - ❖ Acetaminophen 650 PO/PR every 4-6 hrs prn pain.

Patient's regular medications:

_____
_____
_____
_____

13. No heparin, warfarin, or antiplatelet drugs for 24 hours.

Nurse _____Date/Time _____ Physician_____ Date/Time _____

INFORMED CONSENT
REMOTE STROKE CONSULTATION

Fax # (206) 386-2602

As your treating doctor at Yakima Valley Memorial Hospital, I can arrange a videoconference consultation with physicians affiliated with Swedish Hospital in Seattle because I believe you may be having a stroke. To help you (or your authorized representative) decide whether to agree to this consultation, I want to explain how this process works.

Consultation Arrangement:

❑ With permission from you (or your authorized representative), I will arrange a video conference that will allow a Swedish-affiliated physician with expertise in acute stroke care to view you and me and assist in my examination of you. The Swedish-affiliated physician will receive medical information about you for this purpose (including, for example, your name and contact information, date of birth, the nature of your condition(s), relevant clinical history, and radiological images). This personal medical information will be conveyed orally, electronically, and over the Internet, with your hospital and the consulting physicians taking precautions to protect the security of the information.

❑ At the end of the exam and after review of brain images, the Swedish-affiliated stroke physician will give me an opinion about the diagnosis and management of your condition, and I will decide on appropriate next steps for your care.

Confidentiality and Use of Personal Medical Information:

❑ The physicians or staffs who have access to your medical information will keep it confidential in accordance with laws and institutional confidentiality policies. Documentation of the consultation will be retained by me as well as by Swedish affiliated physicians.

Risks:

❑ The presence of video conference equipment raises no medical risk, but some patients may feel uncomfortable when sitting in front of a camera and TV screen.

❑ The privacy and security of personal medical information transmitted electronically cannot absolutely be guaranteed. However, Memorial Hospital and the consulting physicians have taken several steps to protect such transmissions, including using a secure server and encryption.

❑ Electronic exchanges may experience errors or delays, but if such a problem is detected, I will try to relay the information by another means.

Benefits:

❑ I may obtain information about your diagnosis and possible treatment options more quickly with this consultation than otherwise and you may be able to receive treatment sooner. In some cases this consultation may allow you to receive a clot dissolving drug that may improve your neurologic function and otherwise could not be safely prescribed.

Alternatives to Participation:

❑ You are free to choose whether or not to have this consultation. If it is shortly after the start of your stroke, the consultation may be your only opportunity to be evaluated to see if a clot-dissolving medicine might help you. One alternative is that an ambulance may transfer you to another hospital for a neurological evaluation, but a transfer may involve significant delay and might prevent you from being considered for the clot-dissolving medicine.

If you (or your authorized representative) understand the explanation above and would like a consultation with Swedish-affiliated physicians about your (or the patient's) condition, please sign below.

_____ Date: _____
Patient's Signature (or authorized representative)
(If authorized representative, relationship to patient:_____)

Witness: _____ Date: _____
(Other than physician)

I understand and agree that images and recordings of me, including of my face, that are taken during this consultation may be used in the future for teaching purposes.
❑ YES
❑ NO

_____ Date: _____
Patient's Signature (or authorized representative)
(If authorized representative, relationship to patient: _____)

Witness: _____ Date:_____
(Other than physician)

NIH STROKE SCALE

Administer stroke scale items in the order listed. Record performance in each category after each subscale exam. Do not go back and change scores. Follow directions provided for each exam technique. Scores should reflect what the patient does, not what the clinician thinks the patient can do. The clinician should record answers while administering the exam and work quickly. Except where indicated, the patient should not be coached (i.e., repeated requests to patient to make a special effort).

Date:_____ Time:_____ TPA Administered by:_____

Instructions	Scale Definition	BASELINE	2 hrs post t-PA	24 hrs post onset of symptoms	OTHER
1a. Level of Consciousness (LOC): The investigator must choose a response even if a full evaluation is prevented by such obstacles as an endotracheal tube, language barrier, orotracheal trauma/bandages. A 3 is scored only if the patient makes no movement (other than reflexive posturing) in response to noxious stimulation.	**0 = Alert,** keenly responsive 1 = **Not alert,** but arousable with minor stimulation to obey, answer, or respond 2 = **Not alert,** requires repeated stimulation to attend, or is obtunded and requires strong or painful stimulation to make movements. 3 = Responds only with reflex motor or autonomic effects, or totally unresponsive, flaccid, a-reflexic.	___	___	___	___
1b. LOC Questions: The **patient is asked the month and his/her age**. The answer must be correct - there is no partial credit for being close. Aphasic and stuporous patients who do not comprehend the question will score 2. Patients unable to speak because of endotracheal intubation, orotracheal trauma, severe dysarthria from any cause, language barrier or any other problem not secondary to aphasia are given a 1. It is important that only the initial answer be graded and that the examiner not "help" the patient with verbal or non-verbal cues.	0 = **Answers** both questions correctly 1 = **Answers** one question correctly 2 = **Answers** neither questions correctly	___	___	___	___
1c. LOC Commands: The **patient is asked to open and close the eyes and to grip and release the <u>non-paretic</u> hand.** Substitute another one step command if the hands cannot be used. Credit is given if an unequivocal attempt is made but not completed due to weakness. If the patient does not respond to command, the task should be demonstrated to them (pantomime) and score the result (i.e., follows none, one or two commands). Patients with trauma, amputation, or other physical impediments should be given suitable one-step commands. Only the first attempt is scored.	0 = **Performs** both tasks correctly 1 = **Performs** one task correctly 2 = **Performs** neither task correctly	___	___	___	___

Instructions	Scale Definition	BASELINE	2 hrs post t-PA	24 hrs post onset of symptoms	OTHER
2. Best Gaze: **Only horizontal eye movements will be tested**. Voluntary or reflexive (oculocephalic) eye movements will be scored but caloric testing is not done. If the patient has a conjugate deviation of the eyes that can be overcome by voluntary or reflexive activity, the score will be 1. If a patient has an isolated peripheral nerve paresis (CN III, IV or VI) score is 1. Gaze is testable in all aphasic patients. Patients with ocular trauma, bandages, pre-existing blindness or other disorder of visual acuity or fields should be tested with reflexive movements and a choice made by the Investigator. Establishing eye contact and then moving about the patient from side to side will occasionally clarify the presence of a partial gaze palsy.	**0 = Normal** 1 = **Partial gaze palsy.** This score is given when gaze is abnormal in one or both eyes, but where forced deviation or total gaze paresis are not present. 2 = **Forced deviation,** or total gaze paresis not overcome by the oculocephalic maneuver.	____	____	____	____
3. Visual: **Visual fields (upper and lower quadrants) are tested by confrontation, using finger counting or visual threat** as appropriate. Patient must be encouraged, but if they look at the side of the moving fingers appropriately, this can be scored as normal. If there is unilateral blindness or enucleation, visual fields in the remaining eye are scored. Score 1 only if a clear-cut asymmetry, including quadrantanopia is found. If patient is blind from any cause score 3. Double stimulation is performed at this point. If there is extinction patient receives a 1 and the results are used to answer question 11.	**0 = No visual loss** **1 = Partial hemianopia** **2 = Complete hemianopia** **3 = Bilateral hemianopia** (Blind including cortical blindness)	____	____	____	____
4. Facial palsy: Ask, or use pantomime to encourage **the patient to show teeth or raise eyebrows and close eyes.** Score symmetry of grimace in response to noxious stimuli in the poorly responsive or non-comprehending patient. If facial trauma/bandages, orotracheal tube, tape or other physical barrier obscures the face, these should be removed to the extent possible.	0 = **Normal** symmetrical movement 1 = **Minor paralysis** (flattened nasolabial ford, asymmetry on smiling) 2 = **Partial paralysis** (total or near total paralysis of lower face) 3 = **Complete paralysis** of one or both sides (absence of facial movement in the upper and lower face)	____	____	____	____
5. Motor Arm: The limb is placed in the appropriate position; **extend the arms (palms down) 90 degrees** (if sitting) or 45 degrees (if supine). Drift is scored if the arm falls before 10 seconds. The aphasic patient is encouraged using urgency in the voice and pantomime, but not noxious stimulation. Each limb is tested in turn, beginning with the non-paretic arm. Only in the case of amputation or joint fusion at the shoulder, the examiner should record the score as untestable (UN), and clearly write the explanation for this choice.	0 = **No drift,** limb holds 90 (or 45) degrees for full 10 seconds 1 = **Drift;** limb holds 90 (or 45) degrees, but drifts down before full 10 seconds; does not hit bed or other support. 2 = **Some effort against gracity**, limb cannot get to or maintain (if cued) 90 (or 45) degrees, drifts down to bed, but has some effort against gravity. 3 = **No effort against gravity,** limb fails. 4 = **No movement** 9 = **Amputation,** joint fusion Explain: _____ **5a. Left Arm** **5b. Right Arm**	 ____ ____	 ____ ____	 ____ ____	 ____ ____

DO NOT ADD 9'S INTO TOTAL SCORE

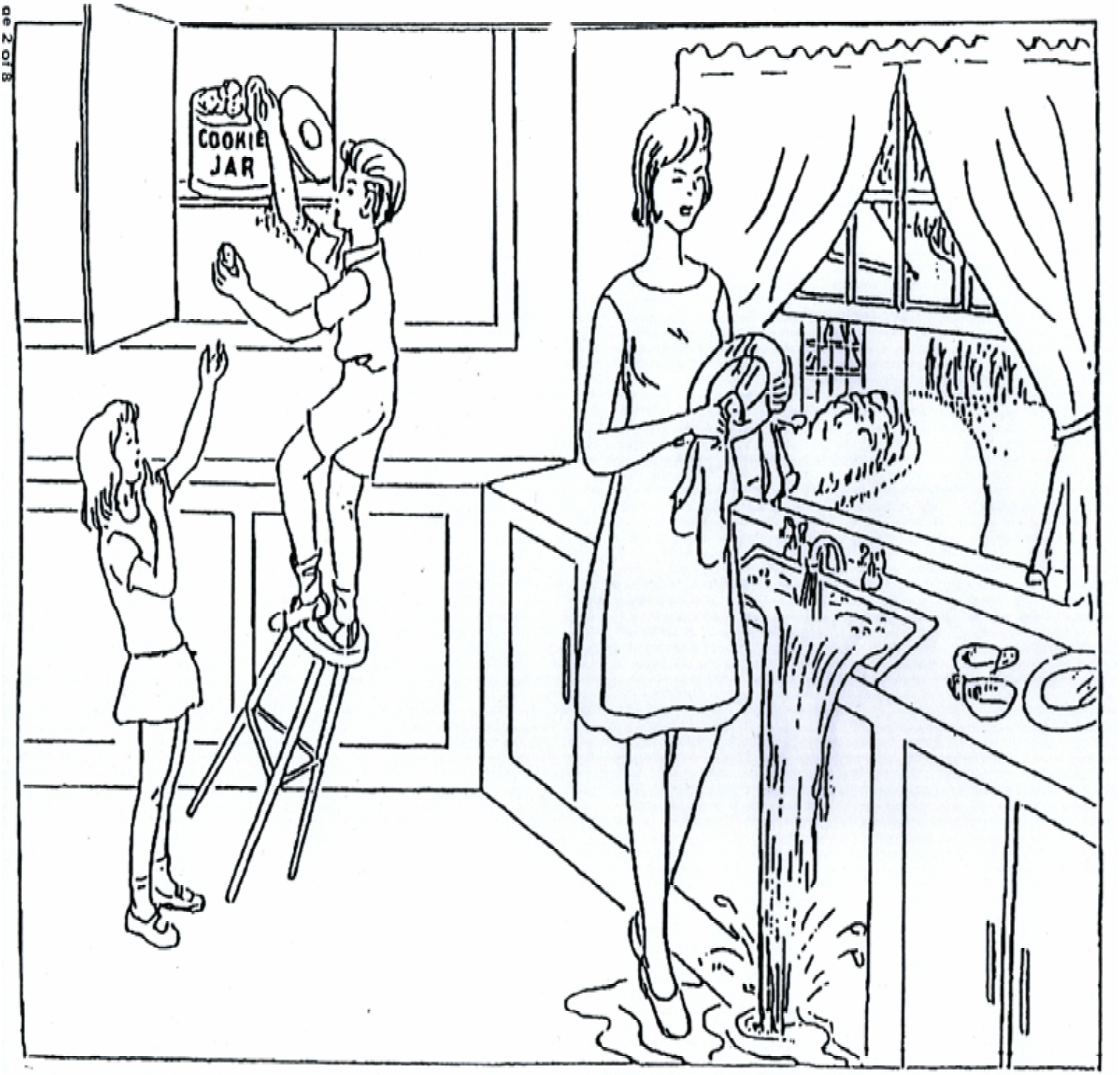
Instructions	Scale Definition	BASELINE	2 hrs post t-PA	24 hrs post onset of symptoms	OTHER
6. Motor Leg: The limb is placed in the appropriate position: **hold the leg at 30 degrees (always tested supine).** Drift is scored if the leg falls before 5 seconds. The aphasic patient is encouraged using urgency in the voice and pantomime, but not noxious stimulation. Each limb is tested in turn, beginning with the non-paretic leg. Only in the case of amputation or joint fusion at the hip, the examiner should record the score as untestable (UN), and clearly write the explanation for this choice.	0 = **No drift,** leg holds 30 degrees position for full 5 seconds. 1 = **Drift,** leg falls by the end of the 5 seconds period but does not hit bed 2 = **Some effort against gravity;** leg falls to bed by 5 seconds, but has some effort against gravity. 3 = **No effort against gravity,** leg falls to bed immediately 4 = **No movement** 9 = **Amputation,** joint fusion explain: _____ **6a. Left Leg** **6b. Right Leg**	____ ____	____ ____	____ ____	____ ____
7. Limb Ataxia: This item is aimed at finding evidence of a unilateral cerebellar lesion. **Test with eyes open.** In case of visual defect, insure testing is done in intact visual field. The **finger-nose-finger and heel-shin tests are performed on both sides,** and ataxia is scored only if present out of proportion to weakness. Ataxia is absent in the patient who cannot understand or is paralyzed. Only in the case of amputation or joint fusion, the examiner should record the score as untestable (UN), and clearly write the explanation for this choice. In case of blindness, test by having the patient touch nose from extended arm position.	**0 = Absent** **1 = Present in one limb** 2 = **Present in two limbs.** UN = **Amputation** or joint fusion, explain: _____	____	____	____	____
8. Sensory: **Sensation** or grimace **to pin prick when tested, or withdrawal from noxious stimulus in the obtruded** or aphasic patient. Only sensory loss attributed to stroke is scored as abnormal and the examiner should test as many body areas (arms {not hands}, legs, trunk, face) as needed to accurately check for hemisensory loss. A score of 2, "severe or total," should only be given when a severe or total loss of sensation can be clearly demonstrated. Stuporous and aphasic patients will therefore probably score 1 or 0. The patient with brain stem stroke who has bilateral loss of sensation is scored 2. If the patient does not respond and is quadriplegic score 2. Patient in coma (Item 1a = 3) are arbitrarily given a 2 on this item.	0 = **Normal;** no sensory loss 1 = **Mild to moderate sensory loss;** patient feels pinprick is less sharp or is dull on the affected side; or there is a loss of superficial pain with pinprick but patient is aware he/she is being touched. 2 = **Severe to total sensory loss;** patient is not aware of being touched in the face, arm and leg.	____	____	____	____

DO NOT ADD 9'S INTO TOTAL SCORE

Instructions	Scale Definition	BASELINE	2 hrs post t-PA	24 hrs post onset of symptoms	OTHER
9. Best language: A great deal of information about comprehension will be obtained during the preceding sections of the examination. For this scale item, the patient is asked to **describe what is happening in the attached picture, to name the items on the attached naming sheet and to read from the attached list of sentences.** Comprehension is judged from responses here, as well as to all of the commands in the preceding general neurological exam. If visual loss interferes with the tests, ask the patient to identify objects placed in the hand, repeat, and produce speech. The intubated patient should be asked to write. The patient in a coma (item 1a=3) will automatically score 3 on this item. The examiner must choose a score for the patient with stupor or limited cooperation, but a score of 3 should be used only if the patient is mute and follows no one-step commands.	0 = **No aphasia,** normal 1 = **Mild to moderate aphasia;** some obvious loss of fluency or facility or comprehension, without significant limitation on ideas expressed or form of expression. Deduction of speech and/or comprehension, however, makes conversation about provided material difficult or impossible. For example in conversation about provided material examiner can identify picture or naming card from patient' response. 2 = **Severe aphasia;** all communication is through fragmentary expression; great need for inference, questioning, and guessing by the listener. Range of information that can be exchanged is limited; listener carries burden of communication. Examiner cannot identify materials provided from patient response. 3 = **Mute, global aphasia;** no usable speech or auditory comprehension.	____	____	____	____
10. Dysarthria: If patient is thought to be normal, **an adequate sample of speech must be obtained by asking patient to read or repeat words from the attached list** (page 8). If the patient has severe aphasia, the clarity of articulation of spontaneous speech can be rated. Only if the patient is intubated or has other physical barriers to producing speech, the examiner should record the score as untestable (UN), and clearly write an explanation for this choice. Do not tell the patient why he or she is being tested.	0 = **Normal.** 1 = **Mild-to-moderate dysarthria;** patient slurs at least some words and, at worst, can be understood with some difficulty. 2 = **Severe dysarthria;** patient's speech is slurred as to be unintelligible in the absence of or out of proportion to any dysphasic, or mute/anarthric. UN= **Intubated** or other physical barrier, Explain: _____	____	____	____	____
11. Extinction and Inattention (formerly Neglect): Sufficient information to identify neglect may be obtained during the prior testing. If the patient has a severe visual loss preventing visual double simultaneous stimulation, and the cutaneous stimuli are normal, the score is normal. If the patient has aphasia but does appear to attend to both sides, the score is normal. The presence of visual spatial neglect or anosagnosia may also be taken as evidence of abnormality. Since the abnormality is scored only if present, the item is never untestable.	0 = **No abnormality** 1 = **Visual, tactile, auditory, spatial, or personal inattention** or extinction to bilateral simultaneous stimulation in one of the sensory modalities. 2 = **Profound hemi-inattention or extinction to more than one modality;** does not recognize own hand or orients to only one side of space.	____	____	____	____
Total NIH Test Score					
Person Administering Scale initials					

DO NOT ADD 9'S INTO TOTAL SCORE

RN Initials/Signature	Time	RN Initials/Signature	Time
RN Initials/Signature	Time	RN Initials/Signature	Time
RN Initials/Signature	Time	RN Initials/Signature	Time


COOKIE
JAR

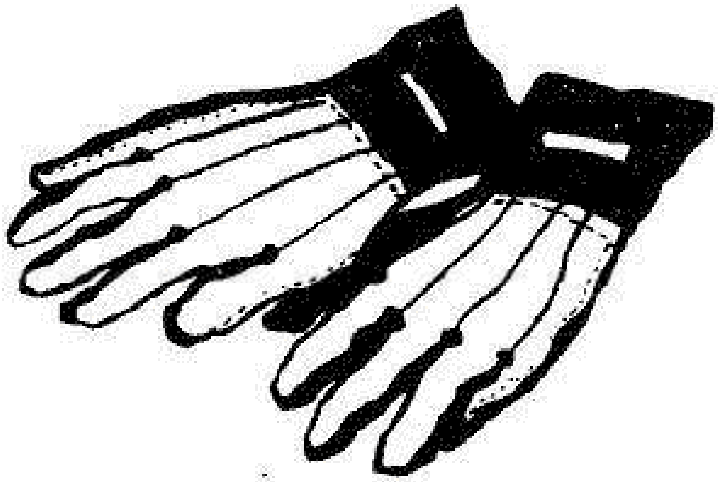
You know how.
Tv sabes como.

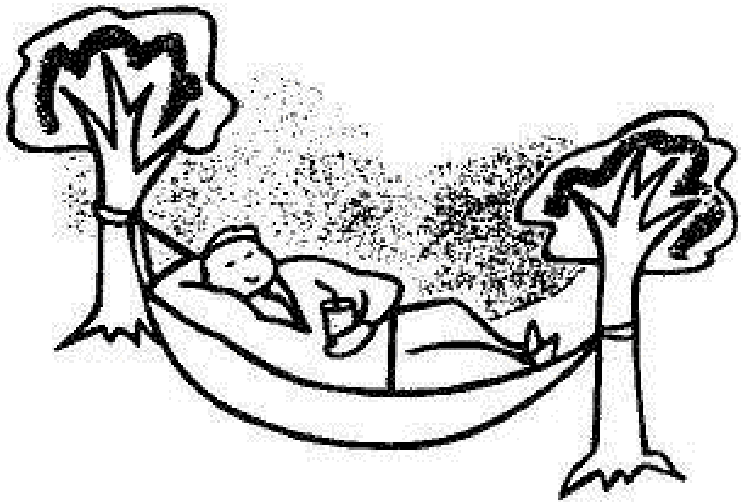
Down to earth.
Practico

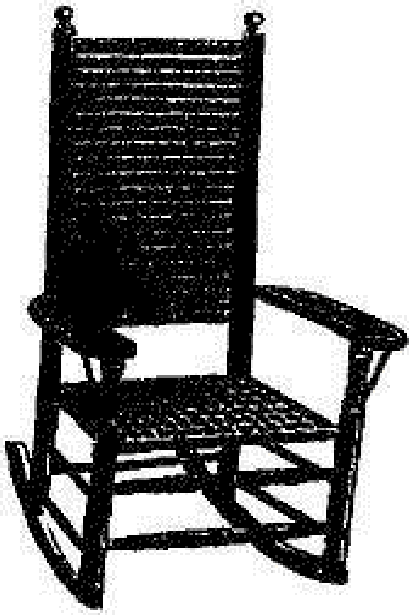
I got home from work.
Llegue a casa despues del trabajo.

Near the table in the dining room.
Cerca de la mesa en el comedor.

They heard him speak on the radio last night.
Anoche, ellos lo oyeron hablar en el radio.







Have Patient read or repeat after examiner.

Mama
Mamá

Tip - Top
De Primera

Fifty - Fifty
A medias

Thanks
Gracias

Huckleberry
Arandano

Baseball Player
Jugador de beisbol

Alteplase for Acute Ischemic Stroke
Protocol Guidelines

1. Patient Eligibility

- Age > 18 years
- A significant neurologic deficit expected to result in long term disability
- Non-contrast CT scan showing no hemorrhage and no well-established new infarct
- Acute ischemic stroke symptoms with last known well, clearly defined, less than 4.5 hours before rtPA (alteplase) will be given

2. Contraindications

Use extreme caution if treating with IV tPA in the presence of documented contraindication

- SBP greater than 185 or DBP greater than 110mmHg (despite measures to reduce it)
- CT findings (ICH, SAH, or major infarct signs)
- Platelets less than 100,000, PTT greater that 40 sec after heparin use, or PT greater than 15 or INR greater than 1.7, or known bleeding diathesis
- Recent Surgery/Trauma (less than 15 days)
- Seizure at onset (with postictal impairment)
- Active internal bleeding (less than 22 days)
- Recent intracranial or spinal surgery, head trauma, or stroke (less than 3 months)
- History of intracranial hemorrhage or brain aneurysm or vascular malformation or brain tumor
- Suspicion of subarachnoid hemorrhage

3. Warnings

Some of these conditions may increase the risk of unfavorable outcomes but are not necessarily a contraindication to treatment

- Stroke severity - too mild
- Rapid improvement
- Stroke severity - too severe (e.g. National Institute of Health Stroke Scale (NIHSS) greater than 22)
  [Many centers do not exclude patients based on an increased NIHSS alone.]
- Glucose less than 50 or greater than 400mg/dl
- Life expectancy less than 1 year or severe co-morbid illness or Comfort Measures Only on Admission
- Increased risk of bleeding due to : Subacute bacterial endocarditis, Hemostatic defects, including those secondary to severe hepatic or renal disease, Diabetic hemorrhage retinopathy, or other hemorrhagic ophthalmic conditions, Septic thrombophlebitis or occluded AV cannula at seriously infected site, Patients currently receiving oral anticoagulants (e.g. Warfarin sodium)
- Pregnancy
- Advanced age
- Documented left heart thrombus

4. Sequence of Events

- Determine whether time is available to start treatment with t-PA
- Activate 'Stroke Alert' team with overhead page
- Notify the YVMH radiologist on call and CT scan
- Page Swedish Telestroke Team (206-405-7317)
- Verify and/or place 2 IV lines in patient
- Draw blood for tests while preparations are made to perform non-contrast head CT scan
- STAT EKG
- Start recording blood pressure
- Notify pharmacy at ext. 8037 of possible t-PA patient
- Physician/RN to perform brief focused neurological assessment
- CT scan without contrast within 25 minutes of arrival (Flagged as ˆTelestroke CT˜ to insure images are pushed to Swedish PAC)
- Lift team to weigh patient at CT Scanner with Hoyer lift - stated weight should only be used if obtaining actual weight will increase time to t-PA
- Determine if CT shows evidence of hemorrhage within 45 minutes of arrival
  - If patient has severe head or neck pain, or is somnolent or stuporous, be sure there is no evidence of subarachnoid hemorrhage
  - If there is a significant abnormal lucency suggestive of infarction on initial CT, reconsider the patient's history since the stroke probably occurred earlier
- RN or Physician to perform first neurologic assessment using the NIHSS
- Review required test results
  - CBC, iSTAT CX8, INR, and Serum HCG if necessary
- Review patient selection criteria - thrombolytic checklist
- Notify the pharmacy at ext. 8037 with a verbal order for t-PA including the patient's current weight and allergies
- Obtain informed consent
- RN or Physician to repeat neurologic assessment using the NIHSS

Alteplase for Acute Ischemic Stroke
Protocol Guidelines

- Infuse t-PA over 1 hour
  - Give 0.9 mg/kg, 10% as a bolus over one minute, intravenously
  - Do **not** use the cardiac dose
  - Do **not** exceed the 90 mg maximum dose
  - Do **not** give any antiplatelet drugs, heparin, or warfarin for 24 hours
- Monitor the patient carefully, especially blood pressure. Follow the blood pressure algorithm
- Monitor neurologic status including use of the NIH Stroke Scale
- Involve the patient's attending physician as early as possible in the stroke treatment process
- ED Unit Secretary to fax YVMH patient face sheet and signed video consent form to Swedish Hospital at fax number 206-386-2602

5. Treatment

- r-TPA Dose = 0.9 mg/kg (NTE 90 mg) infused over 60 minutes with 10% of the total dose given as an initial IV bolus over 1 minute

6. Adjunctive Therapy

- No heparin, warfarin, aspirin, or other anti-platelet agents are administered during the first 24 hours after symptom onset. If heparin or other anticoagulant is indicated after 24 hours, consider performing non-contrast CT scan or other sensitive test to rule out intracranial hemorrhage before beginning therapy, no foley catheters, and no arterial or venous punctures

7. Blood Pressure Control

- **Pretreatment**
  - Monitor blood pressure every 15 minutes. It should be below 185/110 mmHg
- **During and After Treatment**
  - Monitor blood pressure for the first 24 hours after starting treatment:
    - Every 15 minutes for 2 hours after starting t-PA
    - Every 30 minutes for 6 hours, then
    - Every 60 minutes for 18 hours
  - If diastolic BP > 140 mmHg, start an intravenous infusion of sodium nitroprusside
  - If systolic BP > 230 mmHg and/or diastolic BP is 121-140 mmHg, give labetalol 20 mg IV over 1-2 minutes. The dose may be repeated and/or doubled every 10 minutes, up to 300 mg. Alternatively following the first bolus dose of labetalol, an intravenous infusion of 2-8 mg/min labetalol may be initiated and continued until the desired BP is reached. If satisfactory response is not obtained, use sodium nitroprusside
  - If systolic BP is 180-230 mmHg and/or diastolic BP is 105-120 mmHg on two readings 5-10 minutes apart, give labetalol 10 mg IV over 1-2 minutes. The dose may be repeated or doubled every 10-20 minutes, up to 300 mg. Alternatively following the first bolus dose of labetalol, an intravenous infusion of 2-8 mg/min labetalol may be initiated and continued until the desired BP is reached
  - **Monitor blood pressure every 15 minutes during antihypertensive therapy. Observe for hypotension.**
  - **If, in the clinical judgment of the treating physician, an intracranial hemorrhage is suspected, the administration of t-PA should be discontinued and an emergent CT scan should be obtained**

8. Management of Intracranial Hemorrhage

- Intracranial hemorrhage should be suspected following the start of t-PA infusion if there is any acute neurologic deterioration, new headache, acute hypertension, or nausea and vomiting
- If hemorrhage is suspected, do the following:
  - Discontinue t-PA infusion unless other causes of neurologic deterioration are apparent
  - Immediate CT scan or other diagnostic imaging sensitive for the presence of hemorrhage
  - Draw blood for INR, aPTT, platelet count, fibrinogen, and type and cross match
  - Prepare for administration of 6-8 units of cryoprecipitate
  - Prepare for administration of 1-2 pheresis packs
- If intracranial hemorrhage is present:
  - Obtain fibrinogen results
  - Consider administering platelets or cryoprecipitate if needed
  - Consider alerting and consulting a hematologist or neurosurgeon
  - Consider decision regarding further medical/surgical therapy
- A plan for access to emergent neurosurgical consultation is recommended

9. Quality Assurance

- All cases will be reviewed quarterly by an interdisciplinary committee for protocol adherence and patient outcomes
- All patients will be followed up by a neurologist at 3 months for measurement of neurologic outcome after TPA

Parenteral Fluid Sheet

SOLUTIONS		START RESTART	LOCATION	EQUIPMENT CHG. & DRESSINGS													
				NEEDLE SIZE	# OF ATTEMPTS	FLOW RATE	TUBING CHANGE	FILTER	DIAL	I.V. PUMP	BLOOD TUBING	PERIPHERAL LINE	CENTRAL LINE	SITE CONDITION	I.V. DC'D	CANNULA INTACT	INITIALS
DATE:_____ TIME:______ BOTTLE No.______																	
		COMMENTS:													SIMPLE / DIFFICULT		
DATE:_____ TIME:______ BOTTLE No.______																	
		COMMENTS:													SIMPLE / DIFFICULT		
DATE:_____ TIME:______ BOTTLE No.______																	
		COMMENTS:													SIMPLE / DIFFICULT		
DATE:_____ TIME:______ BOTTLE No.______																	
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DATE:_____ TIME:______ BOTTLE No.______																	
		COMMENTS:													SIMPLE / DIFFICULT		
DATE:_____ TIME:______ BOTTLE No.______																	
		COMMENTS:													SIMPLE / DIFFICULT		
DATE:_____ TIME:______ BOTTLE No.______																	
		COMMENTS:													SIMPLE / DIFFICULT		

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Date/Time
Comments

HR PR QRS Qt Qtc

Rhythm

HR PR QRS Qt Qtc

Rhythm

HR PR QRS Qt Qtc

Rhythm

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WILLIAM, DOBBS
M 307383 78Y 07/24/1928
ADM
03/20/2007 M
ATN Mandanis, Christos MD

Rhythm Strip
Cardiac
Rev. 2-08 Form 49

YAKIMA VALLEY MEMORIAL
AWARD WINNING HOSPITAL

CA0007

YAKIMA VALLEY MEMORIAL
AWARD WINNING HOSPITAL

FS0020

Acute Ischemic Stroke - Tissue Plasminogen Activator (t-PA) Consent Form

Dr. _____ has advised me that I am in the early stages of a stroke and can receive an intravenous treatment with Tissue Plasminogen Activator (t-PA) in an attempt to reverse my symptoms (like weakness, difficulty speaking, paralysis, numbness, and other neurologic problems).

I understand that this treatment is approved by the Food and Drug Administration (FDA) to improve stroke recovery and decrease permanent disabilities in adults with the most common type of stroke. Most strokes are caused by blood clots that stop the flow of blood to the brain. t-PA can dissolve these blood clots to improve blood flow to the brain. A CT scan of the brain needs to be done to make sure that bleeding is not the cause of this stroke. The treatment with t-PA must be given within three (3) hours of the start of the stroke symptoms.

1. In patients who received t-PA for their stroke, about 50% will do well (minimal or no permanent disability after three months) compared to 38% of patients who do not receive t-PA. This is about a 12% improvement when t-PA is given.

2. Six percent (6%) of all patient's who receive t-PA following approved guidelines will have bleeding into the brain with worsening of their condition caused by the t-PA. This will cause death in three percent (3%) of all patients who receive the medication.

3. If patients do have bleeding into the brain caused by t-PA, there is little that can be done to improve their condition; even surgery may not help.

Other possible complications from t-PA therapy include but not limited to:

- Minor bleeding that does not require blood transfusion.
- Major bleeding, other than in the brain, that requires blood transfusion of surgery.

If I decline to receive t-PA, I will still receive all available treatment for patients with stroke.

I understand that the early administration of t-PA cannot guarantee that brain damage or other symptoms of stroke will not occur. I understand the possible risks and the possible benefits from receiving t-PA to treat my stroke.

_____ I AGREE to receive t-PA therapy as a treatment for stroke.

_____ I DO NOT AGREE to receive t-PA therapy as a treatment for stroke.

_____	_____
Date/Time	Patient or Relative
_____	_____
Witness	Physician Signature

Telestroke Recorder

Date/Time	Initials	Action
		Blood Drawn or IV start
		Pt went to CT
		Pt returned from CT
		Telestroke interview assessment started
		Telestroke interview assessment ended
		TPA Ordered
		TPA Given
		Meds Given - Why (Value ie HR 144 or BP 244/118
		NIH Stroke Scale - Form 0420, pages 1-4
		Remote Stroke Consult - Form 0253
		Acute Stroke Orders - Form 1168 Pages 1-2
		Acute ischemic Stroke Thrombolytic Checklist - Form 1174
		t-PA Consent - Form 1731

*** Please give original to Dr Miller. A copy can go in the patients record