2010 EPI
MEDICAL RECORD ABSTRACT
VARIABLE DEFINITIONS

DEMOGRAPHICS (pg 1)

D-1: **Abstractor**- Enter your 3 initials.

D-2: **Date of Chart Completion**- Enter the date you completed the abstraction. Use MM/DD/YY format.

D-6: **Date of Admission**-Use the date of *arrival* to the hospital. Find this in the ED record as first recorded ED arrival date. For outpatient charts, (patients that were never admitted), leave this field blank.

D-7: **Final Date of Discharge**-Use date of actual FINAL discharge from hospitalization. For outpatient charts, (patients that were never admitted), leave this field blank.

D-5: **Date of Outpatient Visit**- Complete only on outpatient abstracts. For clinics and M.D. offices, use the date of the office visit, regardless of whether they went to the hospital or not . For nursing homes, use the date of stroke. If the event occurred outside of the study period, for clinics/M.D.'s use the date of the last visit in 2010, and for nursing homes use 12/31/10 or the date of death if occurred in 2010. For autopsies, use date autopsy performed.

D-7a: **Date of Death**- Enter date expired here. Sometimes we find out about a death in the future and need to enter it into the database, so if the patient is alive at discharge don't draw a line through this space.

D-8&8a&8b: **Institution**- List the acute institution. Please note, if the patient visited multiple institutions, fill out page 1A. Also, if the information is incomplete in the acute record, you may need to pursue the other institution's charts. Medical record number should be institution specific. Also record the account number from the chart.

D-11: **ICD-9-CM Code**- Take this from the discharge attestation sheet. Use only *stroke related codes* (430-438) as can be found in the Appendix. If there is no stroke related code listed, please call coordinator to see which code should be entered here.

D-12: **Primary or Secondary** –List whether the stroke related code was a primary or secondary code.

D-14: **Name**- Enter last, first names and middle initial.

D-15: **Address**- Enter the patient's address where they resided at the time of their stroke. If they resided in a nursing home, enter the address of that institution, not their prior home address. Use the home address for rehab facilities or confirmed short stay NH admits (i.e. rehab).

D-16: **Phone Number**- Enter the patient's home phone number. If they reside in an institution, enter the institution's phone number.

D-17: **Social Security Number**- Enter their SSN#. If they don't have an SSN, leave this field blank.

D-18: **Age**-Enter the patient's age at the time of the stroke. This must be verified from the face sheet/date of birth, even if this is contradicted by the progress notes.

D-19: **Date of Birth**- See above. Enter the year of birth as four digits.

D-20: **Gender**- Enter M for male, or F for female.

D-21: **Race**-Enter the race as documented on the face sheet. If there is any question of category (Pacific Islander, for example) refer to Appendix for a description of racial categories by the NIH. If O=other, please write race on line provided.

D-21a: **Ethnicity**- Enter the patient's ethnicity as seen on the face sheet, H = Hispanic, and N = Non-Hispanic. If it is not listed on the face sheet, use documentation in the chart. If ethnicity is not documented anywhere, enter U.

D-22: **Type of Insurance**- Enter the insurance type as noted on the face sheet. If the patient has more than one type of insurance, choose either #3 for Medicare & private, or #7 for Medicare & Medicaid.

D-23: **Marital Status**-Enter the marital status as noted on the face sheet.

D-24: **Employment Status**- Enter their employment status at the time of their stroke as noted on face sheet.

D-25: **Residence at Time of Admission**- Enter their residence at the time of the stroke. If the patient lives in a nursing facility and it is not specified nursing home or assisted living, default to 2=nursing home.

D-25a: **Living Arrangement**- *If answered 1=home for D-25*; enter 1=lives alone, 2=lives with others or 8= unknown.

D-27: **Case**- Enter yes or no based on symptoms and/or imaging.

D-31: **If No, Reason for Exclusion**- Enter the reason you feel this is not a case. When choosing #7=other, explain the reason on the line provided. Answer #3 means the zip code of the address filled in above is out of zip. Answer #4 means that the zip above is in geographic *but* the patient hasn't lived there for at least 3 months. Leave blank if case.

D-29: **Person Determining Status of Case**-Enter who made the final call regarding whether to fully abstract the case.

Complete the rest of this page only if case

D-30: **Type of Case**-Give your clinical impression as to the stroke subtype. See Appendix for a listing of stroke subtype categories and definitions by ICD-9 codes. Also use imaging reports.

D-26: **Site Where Stroke/TIA Occurred**- Enter where the patient was when the stroke symptoms first began. If entering #7=other, please explain.

D-41: **First Medical Contact**- The first person with medical training that speaks to or evaluates the patient. If someone calls 911, and is seen by EMS, first medical contact is "911". If they are driven or drive themselves to the ED, then first medical contact is "ED".
If a patient resides at a nursing home/asst. living, and the home calls 911, the first contact is still "nursing home/asst. living". Hospital should be marked if new event/symptoms begin while patient is already in the hospital, or they are directly admitted from home. Enter #2 if patient is *seen* first at PMD's office for symptoms. If patient talks to the PMD's office on the phone first, enter option #9. If they die with no medical contact whatsoever, then mark coroner, however it must be verified

that they had no medical contact. If you find a case only at a coroner's office, call coordinator.

D-42: **Date of First Medical Contact**- Enter from the above's documentation.

D-43: **Did This Event Occur and Was It Diagnosed and Treated in the Outpatient Setting Only?**- Mark this question yes if the event occurred in an outpatient setting (primary care doctor, nursing home, clinic) AND the patient did NOT come to either an ER or a hospital for their symptoms. Some examples; if someone comes in for a carotid endarterectomy after a TIA, but never came to the hospital for their symptoms at the time of the event, mark this question yes, or, if the event is picked up in the outpatient setting, but the patient WAS hospitalized (and miscoded), then mark the answer to this question NO.

D-46: **Did The Patient Get Discharged and Re-Admitted For This Same Event?** If patient presents to ED with an event but is discharged to home and then returns to ED for continued symptoms, choose yes here and list also on page 1a. Also contact coordinator regarding how to complete ED record disposition question. When you are doing one of these call Kathy and discuss; there are many nuances to these cases and instead of trying to rules it may be better to discuss. There will be definite changes to the post stroke mRS and the outcomes page and the dc meds and dx pages and what timeframes need to be documented. I would rather handle on an individual basis to start out with and see if we can make any steadfast rules

D-45: **Notes**- Use this field to further explain why an event was determined to be a non-case. Include story, negative imaging, non-focal symptoms, etc... to prove the point.

Page 1a - Other Charts Reviewed for this Patient (but not abstracted separately)

This page is for additional charts that belong to this patient *but are not* separate cases, such as ED transfers, rehab, etc. This will account for all the charts you review without doing a separate demo. **Please make a notation in the note field under each chart to explain if it is not a separate event.**

Do not include Drake, HealthSouth or Gateway stays on this page.

PRIOR/SUBSEQUENT TIA (pg 1b)

This is for a prior or subsequent TIA, in time (2010) that did not seek care in a hospital setting which we could retrieve, and that you have little information on but are able to determine a case. **Call coordinator** for subsequent event *and* if unsure if this event should be recorded on a full abstract or on this page only.

PT-1a: **Prior to or Subsequent Event**- Choose one option.

PT-1: **Date of TIA**-Please use as accurate a date as possible. Estimate a month if this is the only information you are given (for example, the symptoms happened “2 months ago”, record that month and our year, using 88 as the day). *Enter date of most recent TIA here.*

PT-2**: Is the Date of TIA Estimated**- Choose one option.

PT-2a: **Is Time of TIA Known**-Choose one option.

PT-3: **if yes…**- Document time of TIA (24 hour clock) in military time.

PT-5a: **Duration of Symptoms for TIA** -Enter if at all possible in hours/minutes before using 88’s.

PT-5c: If Duration of Symptoms for TIA is not exact, then classify choosing one of the options.

PT-5b: **# of Additional Events in 2010**-Do not count the event you are fully abstracting *or* the prior/subsequent event on this page. **Must be same symptoms**. If symptoms are in a different distribution, use a 2nd 1b page. If greater than 3 events, record “3”.

PT-5d: If more than one event, list each event’s dates and times.

PT-6 thru 10: **Symptoms**- Enter an option. When entering #7=other, please describe.

PT-11: **Medical Care Sought**- If the answer is 1=ED, please call a coordinator.

PT-12: **Notes**- Describe the event including symptoms, onset, and the sequence of events.

PT-13 thru 15: **For physician use only.**

EMS RECORD (pg 2)

EMS-2: **EMS Run**-Record whether the chart mentions if there was an EMS run. If possible, try to differentiate between 911 dispatched EMS and transport from other facilities. If there was a run but no records, use option #3.

EMS-3: **Type of Run**- Record whether the EMS run was advanced life support or basic life support. This should be documented on the run sheet. If not noted on run sheet, then mark "ALS" if the patient had cardiac monitoring en route. Mark unavailable if no run sheet is in the chart.

EMS-3a: **Squad** - Taken off the run sheet.

EMS-3b: **EMS Responded to Patient's Residence-** Check address on run sheet (see prior definition of residence above).

EMS-3c: If NO in EMS-3b, enter the address, or at least the name of location where EMS responded.

For EMS- 6a thru 10: if not documented on run sheet, or run sheet not available, mark unknown and do not use ED or other estimations of time in the chart except EMS-8.

EMS-6a: **First Recorded EMS Date**-Date recorded on EMS Sheet.

EMS-6b: **Dispatch Notified Time**-Time of dispatch if noted on the run sheet or CAD database.

EMS-7: **Squad En Route**- As noted on run sheet.

EMS-8: **At Scene Time**- As noted on run sheet. ***If not documented, use the time of first vital signs.***

EMS-9: **To Hospital Time**- As documented on run sheet.

EMS-10: **At Hospital Time**- As documented on run sheet.

EMS-11: **Chief Complaint**- As noted on EMS run sheet in their own words. For example, "Left sided weakness", do not infer they meant "stroke or TIA". Option #7, please explain on line.

EMS-4: **Date of Initial EMS Evaluation-**As noted on run sheet.

EMS-5: **Time of Initial EMS Evaluation-**As noted on run sheet.

EMS-13 thru 16: **Vital Signs**- As documented on run sheet.

EMS-17 thru 21: **Glasgow Coma Scale**- Use the scale/score on the EMS record if done. If you need to estimate the GCS, use the EMS notes/assessments. Estimated? - mark yes or no.

EMS-23, 27, 28, 29, 33, 34: **Life Squad Procedures**- As documented on run sheet. If glucose was done, document the value.

EMS-36: **Other**- List any other significant procedures performed by EMS in the field.

EMS-37 thru 43: **Antihypertensive Medication Given-** Yes or no. If yes, record the *first treated* BP, the medication given, the route of administration, time dose administered and follow-up BP and BP time.

Notes: Any pertinent information not addressed above.

ED RECORD (pg 3)

ED-1: **ED Department Encounter**- Was the patient seen in an emergency department? If the answer is #2, 3, 4 or 8, skip the rest of the page. Answer #5 relates to symptom onset starting in ED. Please note, **if patient was a direct admit enter #4.**

ED-2: **Hospital**- Name of the ***first*** hospital emergency department in which the patient was seen for event.

ED-7&8: **First Recorded ED Arrival Date and Time**- Often noted in ED nursing documentation.

ED-10: **Sent to CT/MRI**- Did the patient get sent from the ED for a CT/MRI scan of the brain.

ED-12: **Time Sent for CT/MRI**- The time the patient left the ED for a CT/MRI scan of the brain as noted in nursing notes. On EPIC, use the time on the top of the CT (can be found next to the order also). If there is no time sent to CT in ED notes, may use time CT done at non-Epic hospitals.

ED-13b: **Clinical Neurological Change in ED**- If there is a *significant* condition change in ED, choose appropriate response. If unsure, call coordinator.

ED-13: **Disposition from ED**- Choose one option. Option #7, please explain on line.

ED-13A: **If "3", Hospital**- If transferred to another hospital, list full name of hospital transferred to.

ED-14& 15: **Date and Time of Hospital Admit or Transfer from ED**- Put in the actual time when the patient left the ED to go to the floor or another hospital.

ED-16&17: **Discharge Date and Time Home from ED**- If the patient is discharged to home from the ED fill in these dates and times, (leave blank if admitted).

ED-18: **Diagnosis from ED Chart**- Fill in the diagnosis as noted by the treating emergency physician. If #7=other, please describe. In EPIC, see hospital encounter, "reason for admission" and EDMD note.

ED-36 thru 39& 41: **Glasgow Coma Score**- If a Glasgow Coma Score was documented by ED nursing or physicians, mark their score. If not documented, but you are able to estimate, mark your score and note "estimated" on ED- 41.

ED-44 thru 45a & 47 & 48: **Procedures**- Enter as documented in ED record. Please note - an arterial line can be radial or femoral, temperature is the first documented in ED (record in Fahrenheit), and use the first recorded blood pressure documented in the ED.

ED-46: **Antihypertensive Medication Given**- Was an antihypertensive med given? See Appendix for drug names and categories. In EPIC, use the MAR (preferred source), for drugs given in ED, along with the ED nursing notes.

ED-46a: **1st Treated Blood Pressure**- Blood pressure recorded that determined treatment needed, could be 1st or a subsequent one but should be the closest to the treatment time.

ED-49 thru 56b: List the BP medications given, the route given, time administered, and follow-up BP and BP time. If a home BP medication is given in ED (because it was missed…), include it here.

SYMPTOMS (1) (pg 4)

Symptoms page: Fill out for all cases describing symptoms that brought them to seek medical attention and those symptoms noted in ED/acute phase, regardless if they have already resolved.

SX-1: **Weakness** - As related in the history. If generalized, or "fatigue" mark 3.

SX-1a, b, c: Mark where the weakness was. Please note:
#U=unspecified, they report a weakness but no side given.
If "right sided weakness" is documented, mark both arm and leg but not face unless noted.

SX-2: **Numbness-** Could be described as tingling/paresthesias/sensory loss.

SX-2a, b, c: Mark where the sensory change was (see SX-1a explanation).

SX-3: **Headache**- Associated with symptoms or is the primary reason for presentation.

SX-3a, b: Answer if yes to headache.

SX-4: **Mental Status**- Mark the closest category describing the patient's mental status. #7 please explain.

SX-5: **Speech**- Try as best as you can to distinguish between slurred or difficult to understand speech from a primary language problem. If the speech is purely slurred or dysarthric, mark "slurred". If the language is abnormal (expressive, receptive aphasia, word-finding, word salad), then mark aphasia. If the patient has both, then use 5. If there is no verbal response choose mute. If you aren't sure, mark "abnormal, unknown type". Option #7, please explain.

SX-6: **Fall/Cannot Walk**- Mark this if patient is unable to walk or goes down/falls.

SX-7: **Vision**- Mark the category describing their visual problems. Double vision = diplopia. Partial loss can mean either vision loss in one eye, or part of the visual field in one or both eyes (such as "left field cut"). Photophobia means a sensitivity to light. Option #7, please explain.

SX-7b & 7c: **Gaze Deviation**- Answer and if yes, enter side.

SX-8: **Dizzy/Vertigo**- Documented.

SX-9: **Ataxia**- Recorded only if documented (if they note dyscoordination, ataxia, terminal dysmetria, dysdiadochokinesia, F to N or H to S abnormal) this would count as "limb ataxia".

SX-10: **Dysphagia/Drooling**- Record if either is documented, same mechanism.

SX-11: **Nausea/Vomiting**- Documented.

SX-12: **Seizure/Jerking**- If documented with this event, not history of.

SX-17: **Nystagmus**- An involuntary rhythmic shaking or wobbling of the eyes (this will be documented).

SX-18: **Asymmetric Pupils**- Documented inequality of pupils.

SX-19: **Tongue Deviation**- Documented.

SX-13: **Other**- Describe any other stroke symptoms that brought them to seek medical attention.

SYMPTOMS (2) (pg 5)

SX-16: **Summary of Event**- This is the story behind the patient seeking treatment for their event. Include date, time and place of onset, duration of symptoms, symptoms (both described by patient and assessed by MD/nurses on presentation), timeline/progression of event, treatment sought and given, etc… Include anything of importance to prove that this event is a case. Can include worsening or improvement of symptoms; anything related to the Stroke/Tia.

FUNCTIONAL STAUS POST STROKE (preferably closest to 24 hours after admission), (pg 5)

(When a worsening occurs; call and discuss with coordinator)

SX-20: **Date Modified Rankin Done**

SX-21: **Modified Rankin**- Again, this is post stroke, within 24 hours of admission. Use H&Ps, nursing notes, PT/OT/ST evaluations… to help determine a score

SX-22: **Describe Disability**- Enter what led you to assign a specific Rankin score.

MEDICAL THERAPIES PRIOR TO ONSET OF STROKE/TIA (pg 6)

MED- 0: **Medication List**-Choose the appropriate option.

MED-1 thru 26: **List All Medications**- Pull these from as many sources as you can, don't rely on just one medication list if possible (**start with ED dictation, then use H&P as your primary sources**). Be sure to check for start dates to confirm the pt. was on the meds pre-event. Aspirin and antiplatelets are the only medications we are collecting doses, so write the dose next to the aspirin or antiplatelet medication on the line. **If the patient has been off of a medication for > 2 weeks, do not list that medication, but do include it under MED-29 if appropriate.**

MED-27: **Medication Non-Compliance Documented on Admission**- As documented.

MED-29: Were any of their antiplatelet/anticoagulation medications stopped by a physician prior to this event (these are listed separately).

MED-30 thru 36: If answered yes to Med-29, mark 1 by the medication stopped, record date stopped if known, and reason stopped if known. If other, please explain.

MED-37: **Notes**- Include any additional information of importance regarding medications.

STROKE/TIA EVALUATION (1) (pg 7)

SE-1: **Date of Stroke/TIA**- This should be when the symptoms first started, OR when they were last seen normal. Do not use the "wake-up" date for this field.

SE-1a: **Is Time of Stroke/TIA Known**- If yes, enter time. If time of stroke is not known, choose no, estimate the time from documentation in the chart, and then complete SE-3.

SE-2: If time of stroke is known, enter the time here. This field does not include time last seen normal.

SE-3: If time of stroke is estimated, pick one of the following:

- "a**woke with symptoms**": patient awoke with symptoms. Symptom onset/last time seen normal/awoke, must be less than 24 hours prior to presentation.
- **>24 hours ago**": if the patient's symptoms began more than 1 day ago.
- "**after midnight**": 00:01am-06:00am.
- "**morning**": 06:01am-12:00pm.
- "**afternoon**":12:01pm-18:00pm.
- "**evening**": 18:01pm-00:00am.
- If the time of onset is completely unknown, then choose unknown.

SE-3a: If no, **Date & Time Last Seen Normal –** if you don't know exact time, fill in est. time.

SE-3b: If "wake-up" **Date & Time Awoke.** If this field is used, SE-3a must have also been completed.

SE-3c: **Did Symptoms Last More Than 24 Hours**- Document if symptom duration is greater or less than 24hrs.

SE-3d: **Duration of Symptoms for TIA**- In hours/minutes if known.

SE-3e: **If Duration of Symptoms for TIA is not exact**- Then choose one of the options to classify.

SE-3f: **Symptoms Resolved Prior to Presentation**- Answer yes, no or unknown.

SE-7a: **BP (if no ED Record)** - Only fill in this blood pressure if they did not go through the ED, (direct admits, strokes in-house, or outpatient). Mark the first documented blood pressure after their stroke.

SE-15: **Modified Rankin Scale Prior to Stroke/TIA Onset**- This is reflective of the patient prior to the event. Use multiple resources (PT/OT/ST initial evaluations, past medical history, residence, assistive devices used…).

SE-15a: **Describe Disability/Disabilities**- That interfere with their activities of daily living. How did you arrive at the Rankin score. Use only pertinent factors.

SE-15b & c: Do they use a cane or walker. Documented.

POTENTIAL IV tPA EXCLUSION CRITERIA:

SE-16e: **MD *documented* reason for rt-PA exclusion**-this can be either from the ED physician, stroke team or the admitting physician. They must mention that they were not a candidate for IV tPA/thrombolytics because….inferring their rationale does not count here. You may not necessarily agree with the reason listed. If they are a TIA, hemorrhage or they are treated with rt-PA, record a "9". When EDMD and stroke team MD both document reasons, stroke team should be used.

STROKE/TIA EVALUATION (1) (pg 7) cont.

SE-16f: **Documented reason excluded from receiving IV rt-PA by MD:** again, just what was documented as a rationale by a physician. We expect most physicians won't specifically mention this, if no reason documented then just put a slash here. As always, if you're not sure how this fits in with the potential variables listed, just put it under 7=other. If a patient/family refuses **rt-PA,** record 'refused' under "7" other. Also, if the patient had a TIA or ICH/SAH, also put a slash here, as it's not applicable. If the patient receives IV tPA, put a 9.

SE-16g: **Reason excluded from receiving IV tPA by RN opinion:** This is a variable based on your clinical judgment of why the patient did not receive rt-PA. We fully expect that your opinion will likely differ from what the MDs document in the chart, this is OK. Note: this variable is intended for IV tPA only. If they go for intra-arterial devices such as MERCI or Penumbra, or intra-arterial tPA, they still have been excluded from IV tPA for a reason that should be documented. If they get both IV and IA tPA, then they should be listed as a 9=pt eligible for IV tPA. If you find a patient that was treated, but appears to have NOT been eligible based on the below criteria, go ahead and mark the reasons why you think the patient wasn't eligible. Let's go through the possible answers here one by one:

Time: the patient must arrive to the ED within 3.5 hours from a known symptom onset. This allows one hour from arrival to treatment with IV tpa.

NIHSS<5: this is either by the documented NIHSSS, or the retrospective scale that you do based on the symptoms described.

INR>1.7: this is on the initial blood draw. Just being on Coumadin, without checking an INR, is not an exclusion for rt-PA.

BP issues: This is a challenging variable. To be eligible for rt-PA, the BP must be < 185/110. To reach this BP, the patient must not require more than 3 doses of IV push BP meds, or require a drip such as nipride or esmolol (the exception is a nicardipine drip, that one is ok).

Platelets <100,000: on the initial blood draw

Imaging exclusion: any blood noted on the initial CT is an exclusion, either SAH, ICH, acute subdural (hygromas don't count), or hemorrhagic transformation of an ischemic infarct. Also, if they present to the ED with an ischemic infarct that is read as "well-defined" infarct, or "mass effect, midline shift", all of those key phrases suggest that the infarct is older than just a few hours. "Subacute" is a term the radiologists all use differently, I wouldn't use this phrase to help you decide.

Blood glucose <50 or >400: this is either the initial fingerstick in the field or in the ED, or on the first renal panel obtained.

Stroke within 3 months: this is an ischemic stroke (not TIA!) within three months from the current event. If they have EVER had an ICH or SAH, they are also excluded, but mark that as an "other" exclusion.

Rapidly improving symptoms: another challenging variable. If the patient is getting "close" to normal, but not quite normal in the ED, I would mark this variable. However, if the patient had a massive stroke and improved to a severe stroke, I would not mark this variable. Another clinical judgment. Make sure that somewhere in the abstract we have a description of how much the patient improved while in the ED.

Recent arterial puncture/non-comp: By "recent" this means within 7 days. It is intended to express an invasive procedure that is not compressible should it bleed. It would include a central venous line in the neck or chest, a lumbar puncture, a colonoscopy/EGD with biopsies, a pacer placement, a cystoscopy with biopsies, etc. However, an art line in the wrist, or a recent cath with access in the groin, would not count, as these are compressible sites.

Recent major surgery < 14 days: Defining major surgery can be challenging, but usually means invasive surgeries, such as open heart, abdominal surgery, etc. Skin surgeries or minor extremity surgeries would not count.

STROKE/TIA EVALUATION (1) (pg 7) cont.

Life exp <3 months or poor functional status: another judgment call. Ask yourself, is the patient really expected to live past three months from now? Is their functional status so poor that it likely would not be worth the risk of thrombolytics? Some examples: widely metastatic lung cancer with spread to liver and bones: not eligible due to life expectancy. Severely demented, bed-bound, not walking patient: not eligible due to functional status.

SE-16a: **Evaluated by Stroke Team**- Meaning the GCNK Stroke team.

SE-16 & 16b: **Evaluated by a Neurologist and/or a Neurosurgeon.**

STROKE/TIA EVALUATION (2) (pg 8) – NIHSS - Default to stroke team (use 1st) if possible.

SE-22: **NIH Stroke Scale Done by Stroke Team**- A full NIHSSS as documented by Stroke Team only.

SE-23: List the score given by the stroke team MD.

SE-24a**: NIHSS Recorded Below** - Prospective is the actual scale done by the stroke team and retrospective is you taking an examination and estimating the score.
The only times that you should NOT attempt to estimate stroke severity is when they die prior to arrival, or patient is admitted for a carotid procedure where the event happened some time ago with little information, or on outpatient TIAs (historical events). Otherwise, give your best attempt at estimating severity using the scale in SE-27 thru 41.
Remember there is a coma scale specific to patients who arrive in a coma.
Also remember that sometimes the ED assessment is suboptimal, but we need that early exam; use the bad exam and then document the next best exam on the additional NIHSS page.

SE-25& 26: **Date and Time of Exam-** That allowed you or stroke team to estimate stroke severity. In EPIC, you may find this in the ED nursing assessment flow sheet 2, or use the first note that references the EDMD being involved in care or the time of note dictated by EDMD (whichever is the earliest time).

SE-26a: **Presenting Stroke/TIA Evaluation Documentation Utilized From**- Whose documentation did you take the stroke scale evaluation from. Option #7, please explain. Please note – if item is not noted in chart, it is coded as normal.

SE-27 thru 41**: see descriptions in the stroke study reference manual.**

SE-31: If there is visual loss in one eye, without clarifiers mark 2= complete hemianopia. If they say 'field cut' or partial loss of vision on one side mark 1=partial hemianopia.

SE-32: If the face is weak in the upper and lower portions, or if they say "Bell's palsy", mark 3.

SE-33-36: Strength as documented in chart. Often strength is rated on a scale of 0-5, with MRC5 being full, MRC4 being weak, MRC3 is antigravity only, MRC2 not antigravity but some movement, MRC1 is twitch only, and MRC0 is no movement or "plegic". MRC4 is a very large category, including the mild weakness to the very weak. If they say a "drift" or "pronator drift" only, mark 1.

SE-37: If they note dyscoordination, ataxia, terminal dysmetria, dysdiadochokinesia, F to N or H to S abnormal, this would count as "limb ataxia". If they only state "ataxia" but don't specify one or two limbs, mark one limb.

SE-38: See description on page.

SE-39: This question purely deals with language. Slurred speech does not count for this question.
Expressive aphasia means difficulty getting the words out, halting, non-fluent, labored, telegraphic frustrated, disjointed words, poor sentence construction or decreased word production. However their comprehension is preserved. In receptive aphasia, speech is preserved but language content is incorrect. It can mean fluent but using the wrong words, jargon, comprehension and repetition are poor, word salad, loss of insight into language difficulty.
If they say "garbled speech" only, then mark a 1 for this question and a 1 for dysarthria.

.SE-40: This question only has to do with the clarity of speech production, not language. If they say slurred speech, dysarthria, sounds like they're drunk, then mark dysarthria.

SE-41: See description on page.

SE-41a: **Are Any Of The Scored Symptoms Above Due To An Old CVA (or other condition)?** If due to CVA describe under SH-3. If other, describe in notefield.

STROKE/TIA EVALUATION (3) (pg 9) - This is only to be used when the initial exam is inadequate.

This evaluation should be *within the first 24 hours* after initial stroke scale evaluation.
This is *not* used for a worsening in patient condition/symptoms.

This NIHSS follows the same procedure as the previous page, with the addition of the following:

SEb-42: Any other deficits discovered that cannot be accounted for above. If yes, list. Examples might include dizziness, imbalance, blurred vision…

STROKE (PRIOR) HISTORY (pg 10)

SH-1: **Prior History of Stroke**- Mark yes for any kind of stroke hx., whether it's ischemic or hemorrhagic.

SH-2: **Number of Prior Strokes** - (not silent).

SH-3: **Any Residual Impairment from Prior Strokes**- As defined by documented residual deficits. Please describe.

SH-4 thru 7a: **Prior Strokes**- List most recent first. If there is a prior stroke mentioned in the record that occurred within the study period, call the coordinator to let her know and investigate. If the record just mentions a "hemorrhage" previously, mark ICH. Mark date of stroke, if unknown mark 88/88/88.

SH-8 thru 10b: **Prior History Of**: – For SDH and TIA include the most recent date of event. SH-10b- if 10a is in our time period, the answer should be either yes or yes, prior TIA page only (if the TIA is described quite well in the record, including timing and symptoms, and the patient did not get seen in an ED or get admitted for that event, please fill out the 1B page describing the event). If they were admitted or seen in an ED, call the coordinator to check on a separate abstract having been done. Ask how to report 13's on subsequent events???

SH-13 thru 23: **Family History**- Mark yes if the chart mentions a positive family history of that condition. If the chart specifically tells you which family member had this condition, only mark yes if it was a first degree relative (parent, child, sibling).

SH-24: **Notes**

BASELINE MEDICAL HISTORY PRIOR TO STROKE/TIA ONSET (1) (pg 11)

Do not judge medical history by the medications they are on; only put "yes" to documented medical conditions prior to the event.

MHX-0: **Weight and Height**- List the patient's weight in pounds. If in the chart as kg, please convert it to pounds prior to entry (1 lb = 2.2 kg). List height in feet and inches.

MHX-0a &0b: **Current Coumadin Use-** If yes, document the reason patient is on the medication**. Use 7 if there is more than one response.**

MHX-1: **History of Hypertension**- Mark this only if the patient has a PRIOR history of hypertension, not just if they present with high blood pressures.

MHX-2: Drug treatment for hypertension. Mark this if the patient has been prescribed medication for hypertension (regardless if they were taking it).

MHX-3**: Diabetes Mellitus**- PRIOR diabetes. Mark this as positive even if the chart says "borderline diabetes" or "diet-controlled diabetes".

MHX-4: Current treatment for diabetes, mark whatever is notated in the chart on admission

MHX-5: Mark all that apply for types of treatment, including diet, oral meds (see appendix for list of oral hypoglycemics/treatments) or insulin.

MHX-6: **History of Elevated Cholesterol**- PRIOR history of elevated cholesterol, total or LDL. This does not refer to elevated triglycerides. For our purposes, the terms: hyperlipidemia, hypercholesteremia, and dyslipidemia would count as a yes in this field.

MHX-7: List the type of treatment for elevated cholesterol (see list for cholesterol lowering agents).

MHX-8: **History of Coronary Artery Disease**- Mark this if the patient has had a prior myocardial infarct, CABG, coronary angioplasty/stenting, or unstable angina.

MHX-9: **History of Myocardial Infarction**- If this is yes, MHX-8 should also be yes. Include MI, subendocardial MI, non-q wave MI. Should be symptomatic, if the chart notes "old MI on EKG" or "hypo/akinetic segments on ECHO consistent with prior MI" but does not note a symptomatic event, mark NO.

MHX-10: Enter the date of the most recent MI.

MHX-11: **Atrial Fibrillation by EKG/History**- Mark yes to this question if the patient has ever had atrial fibrillation, whether in the past, **or** is in afib on admission. Mark "no" if the atrial fibrillation is new and develops AFTER admission. (If patient presents in new onset a-fib, or develops a-fib after admission, also mark yes for question #EKG-12c).

MHX-12: **History of Angina**- As marked in the chart, or "unstable angina", or cardiac chest pain. If the angina is thought to be secondary to coronary artery disease, then MHX-8 should also be marked yes, (some angina can be related to other things, like vasospasm).

BASELINE MEDICAL HISTORY PRIOR TO STROKE/TIA ONSET (1) (pg 11) cont.

MHX-13: **History of Congestive Heart Failure**- This can include right or left ventricular failure, "severe diastolic dysfunction".

MHX-13a: **Baseline Ejection Fraction**- if noted on H&P, prior to admission and not from current echo.
MHX-14: **Heart Valve Replacement**- Do not mark this if the patient had a heart valve "repair", or "valvuloplasty" only if total replacement happened.

MHX-14a: List the type of valve used. Mark "biologic" if the valve is not mechanical, i.e. from a porcine or cadaveric.

MHX-15: List the site of valve replacement. This may be listed in the chart as T = tricuspid, P = pulmonic, M = mitral, and A = aortic.

MHX-16: **Prior Cardiac Bypass Surgery (CABG)**

MHX-17: Date of most recent CABG.

MHX-18: **Cardiac Vessel Angioplasty/Stent**- prior history.

MHX-19: Date of most recent angioplasty/stent

MHX-20: **Cardiac Pacemaker**

MHX-20a: Reason for pacemaker, if known. Choices include 3rd degree heart block/bradycardia, sick sinus syndrome (also known as "tachy-brady syndrome"), or other. Option #7, please explain.

MHX-20b: **AICD/Defibrillator Placed**- (automatic implantable cardiac defibrillator). Note this is different from a pacemaker.

MHX-21: **Cardiomyopathy**- List here if prior to admission on H&P, not if EF% is low on new ECHO. This is used to subtype, so look for appropriate documentation.

MHX-22: **History of Carotid Artery Disease**- (extracranial). Must be >50% stenosis on diagnostic testing, but does not have to be symptomatic or is documented "hx of carotid artery disease".

MHX-23: **Carotid Endarterectomy**

MHX-23b: Sides of endarterectomy – include all past surgeries.

MHX-24: Date of most recent endarterectomy.

MHX-23a: Side of most recent endarterectomy.

BASELINE MEDICAL HISTORY PRIOR TO STROKE ONSET (2) (pg 12)

MHX-24a: **Carotid Stenting/Angioplasty**

MHX-24h: Sides of intravascular interventions- include all past procedures.

MHX-24c: Date of most recent carotid stenting/angioplasty.

MHX-24b: Side of most recent stenting/angioplasty.

MHX24d: Was a distal protection device used- if the procedure note is available for the carotid stenting, please mark if they used a "distal protection device", meaning the "accunet", or umbrella, to catch emboli and protect the brain from stroke.

MHX-24e: **Surgery/Procedure within the Last 30 Days-** Mark this yes if the patient has had any surgery or procedures within the past 30 days.

MHX-24f & g: Date of recent surgery and type.

MHX-25: **Cerebral Angiogram**- Within 24 hours of symptom onset

MHX-26: **Coronary Angiogram**- Within 24 hours of symptom onset

MHX-26a: **Thrombolytic Therapy**- Given for a non-stroke reason within 24 hrs prior to symptom onset. For example, myocardial infarction, peripheral arterial occlusion, graft thrombosis, etc.

MHX-27: **Recent Emboli to Peripheral Arteries**: In last 3 months. Mark if they had an embolus to leg/arm/kidney gut (ie."cold, pulseless blue foot").

MHX-27a: **Recent DVT** (within past 6 months)

MHX-27b: **Greenfield Filter-** Answer yes if *ever* had this type of filter placed.

MHX-27c: **History of Peripheral Vascular Disease**

MHX-28**: Dementia**- Mark this if the chart notes a dementia history.

MHX-28a: If the chart notes the type of dementia, enter type here. Don't try to guess.

MHX-29: **Depression**- History documented.

MHX-30: **Sickle Cell Disease**- Mark this if patient has true sickle disease, <u>not just "sickle trait".</u>

MHX-32: **Hemophilia**

MHX-32a: **End-Stage Renal Disease (ESRD)** documented; may or may not be on dialysis.

MHX-32b: **Chronic Renal Insufficiency-** <u>can have insufficiency without ESRD, but not vice versa.</u>

MHX-33: **HIV Positive**- As marked in the chart, or "AIDS".

BASELINE MEDICAL HISTORY PRIOR TO STROKE ONSET (2) (pg 12) cont.

MHX-34 & 35: **History of Brain Tumor**- If a metastatic tumor, please write this in the note field, along with the site of the primary tumor (i.e. metastatic lung tumor). If a primary brain tumor, then note the type (i.e. GBM, oligo, medulloblastoma, etc).

MHX-36 & 37: **History of Malignancy**- List the type. Include skin cancers; exclude benign tumors, such as lipomas, or fibroid tumors, etc.

MHX-38: **History of Seizure**- Does not have to be receiving treatment, but exclude "pseudoseizure".

MHX-38a: **History of Migraine**- Documented as migraine not headaches.

MHX-38b & c: **Infection within the Last 2 Weeks**- If yes, list type. Do not include seasonal allergies in this field, only if the chart specifically states upper respiratory infection.

MHX-39: **Other Significant Medical Conditions**- List any other medical conditions that you think are relevant.

MHX-39a: **Influenza Vaccine**- Within the last year or documented as current.

MHX-39b: **Pneumonia Vaccine**- Within the past 5 years or documented as current.

MHX-40: **Notes**- List any notes that you want to share about their past medical history, including additional medical problems.

SUBSTANCE ABUSE (pg 13)

SA-1: **Smoking Use**- If noted ever, past or present, cigarettes only. If smoke cigars or chew tobacco, please record the information in the note field.

SA-2: **Number of Years of Smoking**

SA-3: **Number of Packs per Day**- May use decimal point, i.e., 1 ½ packs = 1.5. If stated in the medical record as "less than 1 pack", and non-specific, record as 0.5. If cigars record "99" and put in notes.

SA-4: **Current Smoker**- Meaning any smoking within the last three months.

SA-5: **How Many Years since Last Smoked**- If they are a current smoker, enter 99, if unknown enter 88.

SA-6: **Alcohol Use**

SA-7: **Primary Type**- Type of alcohol the patient most typically drinks.

SA-8: **Servings of Alcohol per Day**- See the abstract for definitions of "serving". Enter 0 if occasional use.

SA-9: **Patient Noted on Medical Record as Heavy Drinker**- Mark this yes if the pt is noted to be a heavy drinker in the M.R. **or** if the *pt drinks more than 2 servings a day*. If noted to be binge drinker, former alcoholic or unknown, choose the appropriate answer.

SA-10, 12 & 21: **Street Drug Use**- Current use the patient has reported. Please specify the drug used if it is not marijuana or cocaine/crack. If pt used street drugs in the past, please enter in note field.

SA-22 & 22a: **Alcohol Detected in Urine or Blood**- If yes, please mark the lab value on the line provided.

SA-23: **Drugs Detected in Urine or Blood** (other than alcohol) - Please mark what was detected in the note field.

SA-24: **Street Drug Use within 24 Hours of Stroke Onset**- By history only.

SA-25: **Notes**- About substance abuse not otherwise noted.

LABORATORY (pg 14)

LAB-1: **Admission Labs Done**- Or at time of event. If an in-house stroke, those labs closest following the stroke/TIA event.

LAB-2: **Location of Lab**- Where admission/event labs were done.

LAB-3: **Date Admission/Event Labs Drawn**

Admission Labs- if a lab is not done leave blank.
LAB-4 thru 8: Enter presenting values. Note, creatinine is different from a creatinine clearance. Glucose can be from a finger stick glucose.

LAB-14 thru 16: Enter presenting values. If not drawn in ED, may use the 1st PT/PTT/INR drawn if within 24 hours of presentation and patient was not put on anticoags that could alter the values.

LAB-23a & 23b: **Tropinin**- Enter the initial value noted in the record (use 0 if within that institute's normal values), and date. If value recorded - is it positive (based on each individual hospital's range).

LAB-23c and 23-f: **Troponin "I" or "T" Drawn**- Enter the initial. Found on the lab results. If not specified, can assume it is the same as the subsequent draw. If no subsequent draw to compare, use 8=unk.

LAB-23d & 23e: **Troponin *peak value-*** Include date and is value recorded positive. If no peak use 2nd drawn.

Additional Labs Drawn During Hospitalization- AM *labs count as fasting for this abstract.*

LAB-9, 10, 12 & 13: **Lipid Profile**- Include date. Should be fasting values.

LAB-18: **Lumbar Puncture Performed**

LAB-19: Note the number of RBCs in the spinal fluid. If more than one tube sent, list the value from the last tube drawn (i.e. if tubes #1 and 4 are sent, list the value from tube #4).

LAB-20: Xanthochromia as noted by the LAB, not by the physician just looking at it.

LAB-24: **Sedimentation Rate** (ESR) - First drawn. Enter value.

LAB-25: **CRP** (C-reactive protein)- Enter value.

LAB-26**: Homocysteine Level-** Enter value

LAB- 27a**: Proteinuria Value** - If a urinalysis was done, was protein present? List the value.

LAB-28: **Fasting Blood Glucose**- Enter value and date

LAB-29: **Hemoglobin A1C** - Checking for diabetes. Enter value and date.

LAB-30: **BNP** (beta naturetic peptide) – List the highest value noted during the hospitalization and date; this checks for the presence and severity of CHF.

LAB-32: **Hypercoaguable Panel Done**- If yes, list each test in note field. This includes lupus anti-coagulant, DRVVT, antithrombin III, protein C, protein S, factor V leiden or activated protein C, anticardiolipin antibodies, prothrombin 20210 genetic test.

LAB-31: **Notes** – Any findings or additional pertinent lab values.

ADMISSION EKG, CHEST X-RAY (pg 15)

EKG-1: **Admission (or at time of event) EKG done-** If there is no report or official reading of the EKG, you may use the EDMD's interpretation of the EKG (use #1 if filling in data from whatever source).

EKG-2: **Admission EKG**- Normal, abnormal, borderline or unknown.

If abnormal, answer the following EKG-3 thru 12b – can be abnormal but not due to choices below.

EKG-3: **Sinus Bradycardia**- HR <60.

EKG-4: **Sinus Tachycardia**- HR>100.

EKG-5: **PAC -** (premature atrial contractions)/**PVC-** (premature ventricular contractions).

EKG-7: **Atrial fibrillation/Atrial flutter**

EKG-8: **3rd Degree Heart Block**

EKG-9: **LVH-** As interpreted by machine or by physicians.

EKG-10: **MI of Indeterminate Age-** As listed on interpretation.

EKG-11: **Acute MI**- Must list "acute" not just ischemic changes.

EKG-12: **V-Fib/V-Tach**

EKG-12a: **Pauses**- Sinus pauses of greater than 5 seconds.

EKG-12b: **ST changes/abnormalities**- very common.

EKG-12c: **Patient Diagnosed with Atrial Fibrillation This Hospitalization**- Diagnosis of new onset a-fib for this patient.

EKG-12d- **Patient Placed on Telemetry** (not just unit but is patient on monitor)

EKG-13: **Chest X-ray** - If abnormal, see next question.

EKG-13a: Abnormality as noted on CXR. If you have any question, please describe report in the note field.

EKG-14: **Notes** – Any additional EKG/Chest findings.

DIAGNOSTIC TESTS (CT and MRs) (pg 16)

Diagnostic tests: (always attach ALL reports)!

When filling out the imaging results, if multiple studies were done, **try to include the initial, and then the most relevant scan at a later point** (if there is one). So if a patient were admitted for a month, with multiple scans, and then bled on day 12, you would fill out the initial scan and the scan on day 12. If no change, you can use the 2nd scan. PLEASE READ THE BODY OF THE REPORT, NOT JUST THE IMPRESSION.

DIA-1: **CT of Head Done After Onset**- First CT of head

DIA-1a**: Reason for CT** - Choices include initial CT done upon presentation (*this is used only if it is the 1st imaging done for this event of any kind*), routine follow-up would be a scheduled exam regardless of clinical condition (such as a 24 hour safety scan after tpa), clinical deterioration as noted in the record, and other (describe in the note field below).

DIA-2: **Location of Study Performed**- (i.e. St. Elizabeth Edgewood, Kentucky Diagnostic, etc).

DIA-3 &4: **Date and Time of Study**- Be sure to cross reference the time with the ED "sent to CT" time that was documented, so that they are in sequence. It *is* okay to use the same time as the "sent to CT" time documented on the ED page, if there is no specific time given on the report.

DIA-5: **Primary Finding**- As noted in report. Hemorrhagic conversion refers to an infarct that has then bled. . Often words like "petechial hemorrhage" will be used, and sometimes it can be difficult to differentiate from ICH. Any questions call the coordinator.

DIA-5a & b: Any additional findings, mark as many as apply. If too long add rest to note fields.

DIA-6: **CT Notes** – Additional findings of interest.

DIA-7 thru 12: **The 2nd CT** is a CT showing significant change*, or*, if no change, use the 2nd CT ordered. Repeat above information for additional CT.

DIA -13: **MRI Done**

DIA-13d: If no, **Reason For No MRI –** select appropriate answer

DIA-13a: **Reason for MR** - See 1a for description (an MR *could be* the initial imaging over a CT. The "initial imaging" choice can only be used once.)

DIA-13b: **Diffusion Weighted Imaging** (DWI) - Look for the word "diffusion" in body of report.

DIA-13c: **DWI Positive for Acute Cerebral Infarct**- Meaning that there was an acute infarct seen on DWI. "T2 shine-through" seen on diffusion does NOT count as positive.

DIA-14: **Location of Study Performed**

DIA-15& 16: **Date and Time of Study**

DIA-17: **Primary Finding-** See DIA-5 explanation.

DIA-17a & b: **Secondary Findings**- On MRI, they can also see prior hemorrhagic changes, sometimes noted as "hemosiderin products". If this is noted, mark "prior hemorrhage". Note that you can mark as many as apply in the MR notes.

DIA-18: **MR Notes**

DIA-19 thru 24: Repeat of above for additional MRI.

DIA-25: **Additional Notes**

ADDITIONAL IMAGING (pg 17)

DIA-26 thru 30: **Fill in Type** (CT, MRI…), Date, Primary Finding and Secondary Finding on all subsequent CT/MRI imaging during the patient's hospitalization.

MR ANGIOGRAPHY

ANG-1 thru 5: **List MRA**, with anatomy scanned, location of study, date and time of study, and if normal or abnormal (attach reports).

CTA

ANG-6 thru 10: **List the CTA**, with anatomy scanned, location of study, date and time of study and findings (attach reports)

CEREBRAL ANGIOGRAPHY

ANG-11 thru 15: **List cerebral angio** done, with anatomy scanned, location of study, date and time of study and findings (attach reports).

ANG-16: Notes- Any additional information of use.

CAROTID ULTRASOUND (pg 18)

CU-2: **Carotid Ultrasound Done After Stroke/TIA**- If yes, complete the rest of the form. Also, record if had one near this event; it will not be repeated. Please note-if a previous/historical carotid ultrasound was done and the results are known, enter those results in the note field.

CU-3: **Date of Ultrasound**

CU-5: **Significant Abnormal Carotid Findings**- Mark if a significant abnormality noted on the record. See the table on the abstract for description of what is considered significant. *If yes to this question, complete the following.*

CU-5a: **Carotid Duplex System** – choose appropriate site. Must complete even if no abnormal findings.

CU-6: **CCA** = common carotid artery. Note: mark "8" if they were unable to see the vessels, due to anatomy or other reasons (intubation, lines, habitus, etc)

CU-7: **ICA** = internal carotid artery.

(St. Elizabeth system)
CU-6a: CCA – see above

CU-7b: ICA – see above

CU-9: **Ulceration-** Mark this if the text of the ultrasound report notes "ulcerated" plaque, mark the location of all ulcerations. *If yes to this question, complete the following.*

CU-10 & 11: **CCA and ICA**

CU-12: **Notes**- Any additional information, including prior ultrasounds.

ECHO (pg 19)

If answering yes to an *asterisked item, copy report and attach.

EC-2: **Echocardiogram**- Done during this hospitalization. *If yes, answer the following.*

EC-3: **Date of Echocardiogram**

EC-4: **Type of Echo**- TTE aka 2D ECHO, or surface ECHO, vs. TEE (transesophogeal). "With bubble" can be either type. When not specified, mark TTE. **If both TTE and TEE are done, use the TEE report to fill out the remainder of the ECHO page.**

EC-5: **Quality of Study**- This is usually noted only when it's a poor study, due to habitus or some other reason.

EC-6: **Abnormal Echocardiographic Findings**-Was the ECHO noted to be normal or abnormal.

EC-7: **Left Atrial Enlargement**

EC-8: **LVH** or left ventricular hypertrophy- This is purely based on ECHO findings, do not mark this if it is only notated on the EKG.

EC-9: **Valvular Vegetation*-** Can also be called fibrotic vegetation, thrombus, mobile mass, or strands.

EC-10: **Cardiomyopathy**- Note this if marked in the report only (not based on EF result).

EC-11: **Mural Thrombus***- This is a blood clot noted in the ventricle or atria of the heart. They can be associated with a ventricular aneurysm, but do not mark this unless they clearly stated there is a thrombus associated with it.

EC-12: **Mitral Valve Prolapse**

EC-13: **Akinetic Wall**- This is a NON-moving segment of the ventricular wall on ECHO. Hypokinetic wall, or poor EF, do not count.

EC-14: **Ventricular Aneurysm***- This is an out pouching of the ventricle wall; often this is akinetic as well.

EC-15: **LV Ejection Fraction**- Simply list # (if 35-40, list 40/highest value).

EC-16: **Spontaneous ECHO Contrast, or "Smoke"-** Seen in the heart or the proximal aorta.

EC-17 &18: **Mitral or Aortic Valve Stenosis/Sclerosis**- Mark this if they note that the mitral or aortic valve is stenosed or has sclerosis.

EC-19**: Patent Foramen Ovale***- If size of the defect is noted, i.e. "pencil-patent" or "probe-patent", note this in the note field. Also, if they say the shunt is "large" or if only present with valsalva maneuver, note this in the note field as well.

EC-20: **Atrial Septal Aneurysm***- If they document the degree of "floppiness", say the excursion of the aneurysm was 10mm, then note this in the note fields.

EC-21: **Aortic Atheroslerotic Debris-** Plaques of ascending aorta & aortic arch.

EC-21a: **Aortic Atheromata***- If they describe the thickness of the atheromata, note this in the note field. Also document if they see "mobile" or "highly calcified" atheromata.

EC-22: **Other**- Document other finds not described above.

EC-23: **Notes-** Include all abnormal findings not addressed above.

INTERVENTIONS (pg 20)

IT-2: **Major Surgeries**- Following their Stroke/TIA and related to the neurological event.

IT-3 & 4: **Date and Time of said Surgery**

IT-5: **Type of Surgery**- Clot evacuation refers to an ICH patient, with neurosurgical hematoma removal. If the patient receives a major endovascular neurological procedure (i.e. embolization of AVM, or other endovascular treatments), mark other and describe.

IT-5a: If surgery is a carotid endarterectomy or stent placement, list side involved.

IT-7: **Intubation**- Intubation related to the patient condition; not for surgery.

IT-8: **Intraventricular Drain or Shunt Placed**- This can be a ventricular drain, or a VP shunt.

IT-12: **Blood Pressure**- Enter the blood pressure documented that is *closest* to 24 hours after their admission (irregardless of symptom onset) unless in-house stroke then it is 24 hours from stroke symptoms.

IT-9: **IV GTT Medication for Hypertension Control-** This could include nipride, esmolol, nicardipine, labetolol, or others, but it must be a continuous drip and not bolus dosing.

IT-9a: If yes, list meds given.

IT-10: **IV GTT Medication for Hypotension Control**- Choices include dopamine, dobutamine, levophed, etc…must be a drip.

IT-11: If yes, list meds given.

IT-12a: **Blood Pressure**- Enter the blood pressure *closest* to acute stroke treatment, if applicable.

IT-14: **Was TPA Administered Following Onset of Stroke**

IT-14a: **Route of Administration**

IT-14b: **Date and Time-** Of medication bolus/infusion starting.

IT-15: **Was Other Thrombolytic Therapy Given Following Onset of Stroke**- *Specify the drug*. Choices might include urokinase, reopro, eptifibatide, argatroban, integrillin, or others. This does not include heparin.

IT-15a: **Route of Administration**- Of other thrombolytic therapy.

IT-15b: **Date and Time**- Of administration of other thrombolytic agent.

IT-15c: **Intracranial Angioplasty/Stent**- In the cerebral vessels in the brain, this includes carotid vessels.

IT-16: **IV Heparin Following Ischemic Event** (Stroke or TIA) - This does not include subcutaneous heparin for DVT prophylaxis or low molecular weight heparin. Must have been *ordered for the stroke* (within 24 hours OR after Neuro consult).

IT-16a: **Date and Time**- Start of IV Heparin.

IT-17: **Nimodipine**- Used following SAH.

IT-18 &19: **Experimental Drug Study**- Includes studies. Enrolled in an acute stroke treatment trial? If so, name the trial and the possible treatments, specify all that apply.

IT-20: **Notes**- For any explanation of entries on this page or additional information.

QUALITY INDICATORS AND THERAPY (pg 21)

QI-1: **DVT Prophylaxis** - Was there medical therapy given to prevent a DVT in an immobilized patient. This means that they must be in bed and unable to walk to the bathroom on day 2 after symptom onset to qualify for DVT prophylaxis. If ambulatory, choose #4.

If yes, modes of prevention used:

QI-1a, b, c & d: In the qualifying patient, mark whether DVT prophylaxis was sub q heparinoids (LMW) or serial compression device, ted hose, or other and list. Mark all that apply.

QI-2: **Foley Catheter**- Placed during their hospital stay.

QI-3: **Sliding Scale Insulin-** Mark if ordered. Include an insulin drip under this heading.

QI-4: **Swallowing Evaluation**- Did the patient at risk for aspiration, receive a swallowing evaluation.

QI-5: **Smoking Cessation Intervention**- This means that a medical professional documented that they discussed strategies for smoking cessation in the chart. **If they don't smoke, mark 9**.

QI-6, 7 & 8: **Physical therapy, Occupational therapy, or Speech therapy-** Did they evaluate the patient. If the patient had no symptoms warranting an evaluation, mark 9.

QI-9 thru 9d: **Physical Therapy**- Select the institution(s) where the patient actually received therapy.

QI-10 thru 10d: **Occupational Therapy**- Select the institution(s) where the patient actually received therapy.

QI-11 thru 11d: **Speech Therapy**- Select the institution(s) where the patient actually received therapy.

PLEASE NOTE:

QI-9b, QI-10b and QI-11b include any rehab facility were the patient is an inpatient! Examples include Drake, Gateway, GSH rehab floor, BN rehab…
QI-9c, 10c, and 11c are marked if the patient goes to a SNF (whether outside the hospital or within the hospital), even if noted for rehab purposes.

CLINICAL COURSE (1) (pg 22)

CC-7a: **Hemorrhagic Transformation**- This is defined as bleeding into a recent stroke, into the same territory, within 14 days.
This could be a significant amount of blood or as small as petechial staining in the infarcted area. Bleeding into another area of the brain, or bleeding into a stroke after 14 days, is considered a new event.

CC-7b: **Date transformation noted** in chart

CC-7d: **Time of event**, if noted

CC-7c: **Describe Event**- Around the time that bleeding was noted on CT/MRI scan.

CC-10a: **Infarct following Hemorrhage**- This should be only for those strokes that are not considered a separate event. If this comes up, you should call the coordinator to discuss, and attach the imaging report.

CC-8: **Vasospasm Documented**- If yes, how was this determined, by transcranial doppler (TCD), angiogram, CTA, or unknown. **Include all that apply.**

CC-9: **TCD Done**- At UC, TCDs are put in the medical record under progress notes, on a separate form.

CC-10: **Hemorrhage Growth by CT**-Did the serial imaging reports of an ICH, SAH, or IVH note that there had been significant growth of the hemorrhage.

CC-11: **Acute Hydrocephalus by CT or MRI**- Note if this is discussed in the imaging reports. This should NOT be marked if the patient has a history of chronic hydrocephalus.

Possible Treatments:

CC-16a thru 16e: **HHH Therapy, Steroids, ICP Monitoring, Mannitol** or other documented treatments. Mark all that apply.

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CC-14: **Clinical Neurological Worsening of Symptoms**- Did the patient change in regards to symptoms, mental status, related to the stroke.

CC-15: **Date and Time**- Of clinical worsening. Describe the worsening, i.e. symptoms, imaging results…in the note field below.

CC-15b thru 15d: If event is an ICH/SAH, do GCS.

If yes to clinical *neurological* worsening, please describe the event/symptoms/worsening on the lines provided.

CLINICAL COURSE (2) (pg 23)

CC-14a: **Clinical Neurological Improvement of Symptoms-** Dramatic or complete resolution.

CC-15a: **Date and Time**: Of improvement noted. If yes, describe.

If yes to clinical *neurological* improvement, please describe the improvement/changes on the lines provided here.

CC-13: **Patient Diagnosed with Diabetes *During* this Hospitalization**

CC-13a: **Patient Diagnosed with Hypertension *During* this Hospitalization**

CC-13b: **Patient Diagnosed with Hypercholesteremia *During* this Hospitalization**

Subsequent New Event (note: this stroke must be abstracted separately by EPI)
If there are questions regarding whether a subsequent event is a new event or a continuation of an old event, contact the study coordinator.

CC-2: **Subsequent Stroke or TIA**- This should only be marked for events that would be considered as a separate event. If you mark this yes, there should be another abstract for this additional event.

CC-3: **Date**- Of subsequent event.

CC-4: **Type**- Of subsequent event.

CC-12: **Notes**- Describing above subsequent event.

DNR Status

CC-17: **Was Patient Made DNR-** Include date and time. *See description on abstract.*

CC-17a: **Was Patient Made Comfort Care Measures Only**- Include date and time. Hospice consult counts as being made comfort care. *See description on abstract.*

COMPLICATIONS/NEW DIAGNOSES (pg 24)

This page is for *documented,* significant complications/new diagnoses that occur during the hospitalization following the stroke. If this is an in-hospital stroke, list only those events that occurred after the stroke was diagnosed. The discharge summary is a good place to start; you are not expected to read every word in the chart to determine this. We are only looking for significant complications, so don't stress!

CX-1 thru 12: List the **Code** of the complication and the **Date** it started. Fill in if the **Notes/or if other, specify,** for all complications (to identify/name the "other" complications and to explain the coded complications). If a complication goes on during a hospitalization only list it once. **Please note-** there have been new complication codes added that are in alphabetical order but out of order by number – please read carefully.

For hyperglycemia:

1) If treated, whether with sliding scale or insulin gtt, include in complications.

2) Do not include in complications if not treated.

CX-13: **Notes**

DISCHARGE MEDICATIONS (pg 25)

Date of Discharge: At final discharge.

DMED-0: **Medications**- Choose the appropriate answer.

DMED-1 thru 28: List *all* the discharge medications (when finally leaving hospital, not just going to in-house rehab, SNF, etc.). List only the aspirin dose. Usually the best place to find this is the discharge summary or discharge planning/instructions/discharge orders.

DISCHARGE DIAGNOSES FROM DC SUMMARY (pg 26)

DDX-0: Choose the appropriate answer

DDX-1 thru DDX-28**:** Copy all diagnoses listed on the discharge summaries**.** If the patient goes to rehab, combine the acute DC summary and the rehab DC summary diagnoses on this page.

OUTCOME (pg 27)

O-1: **Vital Status at Final Discharge**-At final discharge is the patient alive or expired.

O-2: **Date of Death-** If applicable.

O-2a: **Time of death:** this we will be collecting for those who die at discharge and the time is almost always listed.

O-3: **Cause of Death**- Enter the best choice available. Sometimes this is spelled out and sometimes it's a judgment call based on documentation, but if unsure, put unknown.
If entering #7=other, please describe.

O-3a: **Place of Death**

Functional Status at 30 days post stroke (*preferred*) OR discharge (*within 30 days post stroke*). COMPLETE RANKIN (O-4 thru O-7c) **ON ALL PATIENTS** – alive and expired.

O-4: **Date Modified Rankin Done**- This could be the discharge date OR 30 days, but we want whatever puts us closer to 30 days without exceeding 30 days. If they are in the acute setting and go to rehab or SNF, use the date of discharge from there unless it is > 30 days. If in doubt call the coordinator.

O-5 & 6: **Rankin Score**- Use discharge summary, PT/OT, progress notes to determine this. They are not automatically a "4" if they use a cane or a walker; take their overall functioning capabilities into consideration. Describe briefly why you assigned that score.
Patients going to hospice should usually be a 5. There is now an option of "expired" (#6) if needed.

O-7 and 7a: **Does Patient Use a Cane or Walker.** Look for documented proof.

O-8 thru 18b: Varying discharges surrounding this event and where they were discharged to; within the same institution (i.e. rehab unit, SNF, hospice…). Please note O-8 & O-9 must be completed on all patients.

O-19: **Date of Final Discharge** for event- This is *always* completed.

O-20: **Disposition at Final Discharge**- If #7 please specify.

O-21: **Name of Facility at Final Discharge**- If not discharged to their home, name the facility where transferred to.

O-22: **Notes**-any pertinent notes regarding outcome.

Do include the Drake rehab dates on this page but not on the 1A page and not on demo page under final date; this is an exception.
Do not include dates from Gateway or HealthSouth. The date of final discharge for these patients will be from the acute stay.

AUTOPSY (pg 28)

THIS PAGE WILL NOT BE ATTACHED TO THE ABSTRACT. IF YOU HAVE A PATIENT WHO EXPIRES AND HAS AN AUTOPSY, PLEASE COPY THE AUTOPSY REPORT AND THEN COMPLETE THIS PAGE AT THE OFFICE BEFORE TURNING IN.

AU-2 & AU-3: Date of Death, autopsy done?

If yes to autopsy, answer the following AU-4 thru AU-10.

MD SUBTYPE PACKET VARIABLE DEFINITIONS
2010

The following is a list of variables and how to complete each one:

(PHY-1) Case, per physician review: The most important task for the physicians is to decide if the case abstracted is a "case" or "not a case". This decision must be made purely on the clinical presentation, and CANNOT rely on imaging or other factors. The patients' symptoms must be abrupt in onset, and localize to a focal area of the brain. This information is found in several places in the abstract, and should likely take the most time for you to decide. Look at the nurse's brief summary of the case, and the symptoms listed. Look at the actual examination. Some case examples:

-sudden onset confusion, with no other focal findings: not a case
-isolated dysarthria, or isolated vertigo: not a case
-sudden onset diplopia, vertigo and ataxia: this is a case
-sudden loss of vision in one eye thought to be a central retinal artery occlusion: this is a case
-progressive weakness of both legs: not a case

The only exception to this will be with hemorrhage, if blood is seen on imaging, then it is called a case.

An issue that frequently comes up is recurrent events. When is the event a new case, and when is it just a worsening of the old event? In general, if the event is in the same territory as the previous event, and is within 2 weeks of the old event, it is NOT a new case. So a hemorrhagic conversion of an ischemic infarct at day 7 is not a new event, but at day 15 is a new event. If the event is in a new territory of the brain, then that IS a new case.

-hemorrhagic conversions within 2 weeks are not new cases
-worsening symptoms of ischemic stroke within 2 weeks are not new cases
-rebleed of SAH within 4 weeks is not a new case
-worsening of a remote stroke with a clear cause (UTI, pneumonia, etc) that is transient without worsening of their functional status: not a new case
-infarct after SAH secondary to vasospasm is not a new case
-infarct on the other side of the brain at day 2: this is a new case

Cases can be "caused" by any number of medical problems, including hypotension. However, hypotension must cause focal clinical symptoms, we do not want to include diffuse anoxic brain injuries.

-transient symptoms of left sided weakness with extreme hypotension: this IS a case
-decreased mental status after cardiac arrest, non-focal exam, with bilateral hypodensities read on imaging: NOT a case.

(PHY-1a) case, in physician's opinion: this is where you get to state your opinion about whether you really think the patient had a stroke or not, using all the available information including imaging. There will be cases in both directions, some examples below:

-focal symptoms similar to old stroke last year but definitely had a clinical worsening, no clear infection or other cause, MRI DWI negative, patient gets better and goes home. (PHY-1) YES (PHY-1a) NO

-patient presents with confusion only, no other focal symptoms, gets better after a few days. MRI DWI + for a left temporal infarct. (PHY-1) NO (PHY-1a) YES

This distinction is absolutely necessary so that we can compare our stroke incidence rates over time. The rate of use of MRI has grown astronomically, and we need to be consistent and continue to base our overall case/not a case on clinical symptoms ONLY. However, we also need to acknowledge that MRI does help distinguish the diagnosis, and by using both a strict definition and physician opinion variables, we can look at both.

(PHY-2) and (PHY-3) date and initials of MD

(PHY-3a) initials of MD who reviewed films
(PHY-3b-f) are for second and 3rd opinion and whether changes were made, don't worry about these during the initial review

(PHY-4) Physician's final impression of stroke subtype
This is also a very important variable. Pt is considered an ischemic stroke if symptoms last >24 hours, and no blood on imaging. TIA is only for those documented to improve all the way to normal in less than 24 hours. Examples:
-pt presents to ED with numbness in left face and arm, getting better so sent home, but still had symptoms present upon discharge 8 hours after symptom onset: (PHY-4)= (1)Ischemic stroke
-pt presents with right F/A/L weakness and numbness that resolves prior to admission, neuro exams normal. (PHY-4)= (2)TIA
-we have an added variable for 2010, if a person has a documented TIA AND the imaging is +, then (PHY-4)= (13) TIA w/ positive MRI

For hemorrhage, if they only have blood in the brain parenchyma, then mark ICH. If it is only in the subarachnoid space, then mark it SAH. If there is blood in BOTH the brain and the subarachnoid space, then decide which is the primary lesion and mark that. If you don't have the films and you can't decide, then you should request them before making the determination. IVH is reserved for those rare cases with ONLY intraventricular hemorrhage (only 5 or 6 cases out of 4000 last time), and no ICH or SAH.

For hemorrhagic conversion: if the bleed is into the ischemic bed within 2 weeks of symptom onset, then the case is called a hemorrhagic conversion, and it is all one event. If the bleed is in the ischemic bed but >14 days, or in a different part of the brain, that is considered an ICH and is a second event.

Sometimes they can't get imaging, the patient dies too quickly. In that case the stroke type is unknown.

(PHY-4a) if hemorrhagic conversion, symptomatic or not? You only fill this out if the patient has a hemorrhagic conversion of an ischemic infarct. Basically, you are looking for clinical worsening associated with new bleeding on imaging, which would then mean the hemorrhagic conversion was symptomatic. Check the complications page or the clinical course page for "clinical worsening" and "hemorrhagic transformation" variables. If the patient presents with a hemorrhagic conversion on first imaging (often called a "hemorrhagic infarct"), then mark unknown.

(PHY-4b) CLASSIFICATION OF HEMORRHAGIC TRANSFORMATION **(films must be reviewed)**

1=HI-1 (Hemorrhagic infarct type 1; small petechiae along the margins of the infarct)
2=HI-2 (Hemorrhagic infarct type 2; more confluent petechiae within the infarct area but without space-occupying effect)
3=PH-1 (Primary intracerebral hemorrhage type 1; blood clot(s) NOT exceeding 30% of the infarct area with some mild space occupying effect)
4=PH-2 (Primary intracerebral hemorrhage type 2; blood clots exceeding 30% of the infarct area with substantial space occupying effect)
5=RPH-1(Remote primary intracerebral hemorrhage type 1; small or medium sized blood clots located remote from the actual infarct; a mild space occupying effect could be present)
6=RPH-2 (Remote primary intracerebral hemorrhage type 2; large confluent dense blood clots in an area remote from the actual infarct; substantial space occupying effect might be present)

(PHY-4c) potential cause of hemorrhagic conversion If the patient received these meds at around the same time as the hemorrhagic conversion, then you can mark these. Extreme hypertension should only be marked if clearly documented to be prolonged extreme HTN around the time of the hemorrhage.

Now skip to page 3 of the physician packet, as you need to fill out this information first to be able to subtype the patients' case.

For the below questions, remember that this is just what the patient has definitive proof of, NOT what you think the overall subtype is…that will come later. Many patients have multiple potential causes of stroke, you are just documenting them here, and the decision for the actual cause comes later. If you don't have "proof" of the source, as documented in the medical record (and thus in the abstract), but think it's likely, DO NOT MARK IT! We are not allowing "physician opinion" here, outside of our strict definitions.

Fill out these if the patient is an ischemic stroke or TIA subtype:

(STR-1) small vessel occlusive disease: this variable is often difficult for the docs. Basically, <u>you will not be able to mark this as "yes" unless you have viewed the films</u>.

- If the symptoms are clearly not lacunar (one of the five lacunar syndromes, which are: pure motor face = arm = leg, pure sensory F = A= L, sensorimotor F=A=L, clumsy hand dysarthria, or ataxic hemiparesis, without involvement of higher cerebral functions such as level of consciousness, language, praxis, neglect, memory, and vision), or the stroke is clearly larger than a lacune, you can mark this as "4, not seen" without the films.
- When reviewing the films, to be able to mark this as yes "1", the infarct seen must be appropriate to the symptoms, deep in the white matter of the hemispheres or brainstem, and less than 1.5 cm in diameter.
- If the symptoms are typical lacunar, but the stroke is 2 cm in diameter, then mark "2".

- If a small stroke is seen that is deep, that could explain the symptoms, but doesn't fit a classic lacunar syndrome, then mark "3"

(STR-2) cardioembolic source: this information is scattered throughout the abstract. Sometimes the nurses will describe it in their comments on page 4. Check the past medical history for some of the below historical risks. Check the ECHO, the EKG, and the complications in case something happened during the stay. You must answer "yes" to one of the below categories in order to mark "yes" to the cardioembolic source, and you must mark "yes" for cardioembolic source to be able to call it a cardioembolic subtype overall. If they did not do an ECHO of any type, then mark this as "8" unknown.

- **(STR-3) afib or flutter:** this can either be by history, or on examination/EKG. They do not have to currently be in afib! Flutter also counts.
- **(STR-4) MI within 2 months**: check the PMH page, they give you the date of the MI
- **(STR-5) cardiac thrombus on testing:** this is seen on ECHO, or by history
- **(STR-6) valvular vegetation:** this is seen on ECHO or by history
- **(STR-7) prosthetic valve**: this is by history or ECHO, mechanical or bioprosthetic both count here
- **(STR-8) acute CHF**: this only counts if they present with fulminant, acute CHF associated in time with the stroke. Longstanding EF of 30% does not count. I very rarely use this variable.
- **(STR-9) dilated cardiomyopathy:** This should be marked if noted as "yes" to cardiomyopathy on the ECHO report, if the EF is less than 30% on the ECHO report, or if a history of cardiomyopathy is documented in the past medical history. If a history is noted, but it does not correlate with the ECHO report (meaning they say history of EF 20%, with cardiomyopathy, but the ECHO says nl LV fxn, EF 60%), then the ECHO report trumps the history.
- **(STR-10) Right to left shunt with venous source:** This is referring to patent foramen ovale or atrial septal defects as seen on ECHO or by history. However, the presence of such a defect on ECHO is not enough, there must also be a clear right to left shunt AND a documented venous source (meaning most of the time a DVT). I have never marked this variable.
- **(STR-11) Systemic emboli related to a cardiac source within 3 months:** This would be a blue hand or foot due to an embolus from the heart. Very rarely marked.
- **(STR-12) akinetic segment on ECHO or other cardiac testing:** the segment must actually be akinetic, or not moving at all. Hypokinetic segments do not count, nor does diffuse hypokineses. This will be in the ECHO report.
- **(STR-13) Aortic Arch atheroma/mobile thrombus:** This must be documented, usually only seen on TEE. The atheroma must be >4mm thick, and/or a thrombus or mobile segment seen. If it is not documented how thick it is, then do not mark this variable.
- **(STR-14) Sick sinus syndrome:** Sick sinus syndrome must be clearly stated (or "tachy-brady syndrome"). While lots of people have pacemakers, it is very rarely documented why, so just having a pacer is not enough. Very rarely marked.
- **(STR-15) Left ventricular aneurysm:** must be documented on ECHO or by history.

(STR-16) Large Vessel Atherosclerosis: Atherosclerosis is the key word here….there are potentially lots of other things that can happen to large vessels, like dissections, occlusions with emboli, etc. However this variable in intended to represent only athero. This is also scattered in the abstract. Look at the Doppler report on page 16. Look at the MR/CT/cerebral angio. Also historical info may be helpful on the PMH page. If they did not do a Doppler or an MRA, mark this as "8" unknown. You must answer "yes" to one of the below categories in order to mark "yes" to the large vessel source, and you must mark "yes" for large vessel source to be able to call it a large vessel subtype overall.

(STR-16a) Classifying Large Vessel Sources

- If there is evidence of a stenosis of >50% in a vessel appropriate to the stroke in question, mark this as "1". Less than 50% stenoses do not count. Contralateral carotid disease does not count. If they don't comment on the actual degree of stenosis (MRA reports often don't), then only count this if they say "severe" or "critical" stenosis.
- Tandem lesion strokes: if there are two areas of stenosis in the same vessel that is appropriate to the stroke. I have never marked this variable.

(STR 21 a,b,c) large vessel details Fill these out if you marked large vessel as a potential clinical cause even if it is not determined to be the final subtype.

Location: mark whether the symptomatic vessel was intracranial versus extracranial. You can mark both if you have a tandem lesion in the same vessel and aren't sure which one was symptomatic. You shouldn't mark unknown here, as you must know which vessel is symptomatic to call it large vessel.

Distribution: mark which vessel is symptomatic.

Vessel pathology: mark whether the vessel was occluded or stenotic. Angio results supercede all else for this if you have it.

(STR-18) Other identified cause of stroke/TIA: This should only be marked if you have proof of a condition that is linked to the stroke. Some examples are:

- Dissection of an artery appropriate to the lesion
- Cocaine use/other drugs of abuse
- Surgery (within 24 hours of surgery, or present upon awakening from sedation)
- Angio/post cath/PTCA (within 24 hours of procedure, or present upon awakening from sedation)
- Cancer, needs to be an active ongoing diagnosis, likely receiving treatment or new diagnosis. A history of remote breast cancer does not count.
- Hypercoaguable state: needs to be proven, such as protein S or C deficiency, etc. Sometimes the doc will write "stroke in the young secondary due to hypercoaguable state" without any documentation, this does not count. This would be found on the labs page, or by history.
- Temporal arteritis by history, or biopsy during hospital stay
- Venous thrombosis: as found on MRV, or MRI. Would suggest reviewing the films if you are considering this diagnosis.
- "other" use this extremely sparingly, I'm not sure there are too many other causes of stroke that can be rigorously linked to stroke.

(STR-19) make sure you write out what it is that you are calling "other"

(STR-19a) now mark the specific category of what you just wrote (keeps us from having to review all the text fields by hand)

(STR-21) Clinical classification of ischemic stroke: Here is where you mark your overall opinion of subtype. However, you must have proof of your subtype, you cannot mark "cardioembolic" here, without having noted a cardioembolic source on the previous page. If you marked "yes" to unknown stroke subtype, then you should mark "8" here for unknown.

Many times patients have multiple potential sources of stroke. We have created a hierarchy of subtypes as below:

- large vessel supercedes cardioembolic most of the time, so a patient with afib and a high grade carotid stenosis is large vessel
- small vessel supercedes all others most of the time, if the infarct is really that small it isn't likely to be cardioembolic anyway
- large vessel supercedes periop stroke, so the carotid endarterectomy patient with stroke periop is still large vessel.

Page 4 Fill out these if the subtype is ICH or SAH. Note: these do not apply to hemorrhagic conversion!

(STR-22) aneurysm present this is also marked yes if an aneurysm is present within an AVM
(STR-23) AVM present
(STR-23a) infarct following hemorrhage this is where we capture if there is an ischemic infarct due to vasospasm, for instance.
(STR-24) cause of ICH

small vessel HTN: this would be a small, deep bleed in the white matter or brainstem in someone that has a history of HTN

amyloid angiopathy: this would be a cortical ICH in someone older than 65 (realize that this is a "best guess", and it would be helpful to know if microbleeds were seen on GRE—consider writing in the note field)

thrombolytics: again , this would only apply if they got thrombolytics for a non-stroke reason…if it was tpa for stroke they are a hemorrhagic conversion and you don't fill this out!

Tumor: this really shouldn't be marked, as we don't consider tumor and trauma associated ICH to be a "true" ICH

(STR-26) location of ICH
(STR-27) SAH cause

*****NEW in 2010!!*****

Imaging and Location of Stroke Instructions (Turn back to page 2 of the physician packet)

(PHY-9-10) Documentation of stroke location: This should be documented in the radiology reports, attached to the end of the abstract.

- If yes, please record ONLY what you believe to be the acute event lesion(s), do not fill this out recording any remote events. Please record all acute lesions. Mark a "1" for the lesion or lesions responsible for the clinical stroke and "2" for those lesions that are acute, but you do not feel that there are responsible for the clinical presentation.

(PHY-11) If no to PHY-9 (meaning there is no documentation of location of acute stroke, or there is only a single head CT, for example), then this is where you mark what you think is your best estimate of location based on their clinical examination.

(PHY-12) Do you believe the stroke is anterior, posterior, or unknown?

(PHY-13) Periventricular white matter disease: is it mentioned in the imaging reports? Mark yes or no.

(PHY-13a) Severity of white matter disease: Based on the imaging report descriptors, do your best to mark this into a category. Please use MRI first if available, but use CT results when there is no MRI. If white matter disease is described at all, please mark "yes". Then mark the next line appropriate only if the report actually used one of the 4 Fazekis grades: "mild", "moderate", "severe", or "none", if not record an "8". If those words were NOT used, OR if there were additional adjectives for describing the WMD, please either write them in the text field or circle the available commonly used words (like "patchy" or "scattered"). Again, this is only based on reports. Our intention is to review the cohort's films and assign Fazekis grade to the actual severity of WMD, then see if the grading by reports matches and see if the other adjectives can be reliably mapped onto the 4-level scale.

(PHY-5 and 6) Source of information This is where we record if you evaluated the films (for small vessel, for example) or if you just used reports.

(PHY-6a) MRI DWI positive? Occasionally our docs will review an outside film and discover that the MRI was actually DWI +, even though it was read as negative by outside radiologists. This should only be filled out if you review the films.

If you do review the actual films, the following instructions are for the imaging review pages, which are not currently included in your physician packet.

Film review instructions:

If there are more than two CTs or MRIs, pick the first one, and the latest one.

For periventricular white matter,

> **Mild**: lucencies occupying less than one-third of the visualized white matter of the frontal and peritrigonal areas.
>
> **Moderate:** involvement of approximately one-half of the visualized white matter
>
> **Severe:** involvement of virtually all visualized white matter