LOUISIANA
EMERGENCY RESPONSE NETWORK

Acute Stroke Ready Hospital Data Collection Requirements

Who?

All LERN Acute Stroke Ready Hospitals. Primary, Thrombectomy Capable, and Comprehensive Stroke Centers have reporting requirements to The Joint Commission or other Board-approved credentialing agency as a part of the credentialing and maintenance of certification processes. LERN Stroke Bypass Hospitals have no reporting requirements. LERN Acute Stroke Ready Hospitals must submit quarterly reports to LERN in order to ensure that these centers are functioning at the standards set for a LERN Acute Stroke Ready Hospital.

Why?

The primary aim of LERN's stroke system of care efforts is to develop a comprehensive stroke system of care in Louisiana to provide timely access to proven treatments necessary to reduce death and dependency. Your center has attested to LERN Acute Stroke Ready Hospital capability. While Primary, Thrombectomy Capable, and Comprehensive Stroke Centers are held accountable by The Joint Commission or other Board-approved credentialing agency through quarterly reports and on-site reviews, LERN seeks to develop a mechanism of confirming that LERN Acute Strok Ready Hospitals are functioning as Stroke Enabled Centers. The data collected by the Acute Stroke Ready Hospitals will provide the LERN Stroke Medical Director with the opportunity to provide direction for improvement, when the need is identified or when assistance is requested. Persons who present with acute stroke deserve the opportunity to receive time-sensitive treatment with intravenous tissue plasminogen activator (IV tPA) or Tenecteplase (TNK), which is the foundation of acute stroke care. LERN Acute Stroke Ready Hospitals must demonstrate the timely administration of IV tPA/TNK to eligible patients. Further, Acute Stroke Ready Hospitals must recognize and respond to stroke caused by large vessel occlusion in order to gain access to thrombectomy, when appropriate, via rapid transfer to stroke centers with endovascular capability and other needed resources. The data collection requirements focus on the time stamps for evaluation and management of the stroke patient who presents within the first few hours after onset.

What?

Which Patients get entered into the spreadsheet?

Include:

- All patients who present to your ED with suspected stroke
- Any patients who are coded with a stroke diagnosis in your Emergency Department
- DIDO data elements (orange) are only for patients who present within 24hrs of LSN or could be within 24 hrs LSN
- For DIDO, we only need transfer times for patients transferred with the intent of thrombectomy. (Example: a patient who is LVO Positive however the interventional neurologist/radiologist deems as not a candidate for thrombectomy, you can indicate this in comments and not input transfer times)
- Patients with a delayed stroke diagnosis even if they are not processed as a stroke code in the ED. Please indicate delayed diagnosis in the comments.
- Patients who develop stroke symptoms in the ED after their arrival. LSN would be when the symptoms began and arrival time would be when symptoms are noted.

Do Not Include:

- Patients who experienced an in-hospital stroke. This dataset is designed to reflect your ASRH's capability of rapidly evaluating patients with suspected stroke who present to your ED.
- If the patients is identified as having a stroke mimic (i.e. hypoglycemia, seizure disorder) within the first few minutes of arrival, this patient can be removed from your data set or included however indicate stroke mimic in the comments.

1) **Hospital Identifier** = Column A
A unique 3-letter code given to each hospital to anonymously distinguish one hospital's data from another's. For example, Baton Rouge General Medical Center's identifier may be "ADC" while Our Lady of the Lake Regional Medical Center's identifier may be "ABD". This identifier will be assigned by LERN. If you do not know your hospital's identifier, contact Justin Schleis at justin.schleis3@la.gov.

2) **Quarter** = Column B
The quarter of the calendar year in which the data is being reported in the format of Q-YY (e.g., quarter 1 of 2019 would be 1-19). Data should be submitted once per quarter.

For patient info:	Submit no later than:	Quarter reported
January 1 – March 31	April 30	1- YY (e.g., 1-19)
April 1 – June 30	July 31	2- YY (e.g., 2-19)
July 1 – September 30	October 31	3- YY (e.g., 3-19)
October 1 – December 31	January 31	4- YY (e.g., 4-19)

3) **Date** = Column C
The date the patient arrived at the hospital. This should be in the format of Month/Date/Year (e.g., June 10th, 2019 would be 06/10/19).

4) **Patient ID #** = Column D
This shall be a facility-dependent "Dummy ID" so that identifiers can be eliminated from the transferred dataset to LERN. Please use the Hospital Identifier, followed by the quarter, followed by 001. For example, if your hospital identifier is CCC, and it is the 3rd quarter of 2019, your first patient's Dummy ID should be: CCC-3-19-001. The next patient would be: CCC-3-19-002, and so on. If you click and hold the left mouse button on the bottom right corner of the cell containing CCC-3-19-001 and drag it down, the patient ID #s will automatically populate. **Do not include patients who experienced an in-hospital stroke. This dataset is designed to reflect your Acute Stroke Ready Hospital's capability of rapidly evaluating patients with suspected stroke who present to your Emergency Department.**

5) **Known Time of Stroke Onset (TSO)** = Column E
A drop-down menu allows for yes/no answer. Was the stroke witnessed or can the patient verbalize the time the stroke symptoms began? For those patients who are unknown or wake up strokes, advanced imaging may be necessary to determine thrombolytic eligibility OR may need an expedited transfer if your facility does not have advanced imaging capability. For patient's who the response is "no", MAY need to fill out the green boxes.

6) **Time Last Seen Normal (LSN)** = Column F
This is the date and time (military time) that the patient was last known to be at his or her normal neurological condition. This time = the time of onset for:

   i. a person who was awake at onset and can provide his or her own history and

   ii. a person with witnessed onset.

If the LSN time is known, enter that time in military format (e.g, 1:35pm would be 13:35). If the LSN time is between 3.5 hours and 24 hours, simply enter ">3.5 hours." If the LSN time is >24 hours, enter ">24 hours". If the LSN time is unknown, leave the cell blank.

7) **Time Symptoms Noted (TSN)** = Column G

This is the date and time (military time) that the patient was first acknowledged to have an abnormal neurological condition/stroke like symptoms, but the onset was not witnessed. For the patients who were not witnessed, you will have a LSN and a TSN.

Ex. A patient was last seen normal at 0700 when the spouse left for work. Upon returning home for lunch at 1200, the patient was found with weakness and aphasia in the kitchen floor. The LSN is 0700 and the TSN is 1200. This patient has an unknown TSO and may require advanced imaging to determine thrombolytic eligibility.

8) **Time of Arrival to the Emergency Department Door =** Column H
This is the date and time (military time) that the patient was first acknowledged as being present at the LERN Acute Stroke Ready Hospital. If the patient arrives by ambulance, this is the time the ambulance arrives at the LERN Acute Stroke Ready Hospital. If the patient arrives by private vehicle or as a walk-in, this is the time stamp on the ED triage form. This timestamp should be documented for all patients who present within the first 24 hours of LSN. This timestamp may be left blank for patients arriving >24 hours from LSN.

*If the interval between LSN and arrival to the ED Door is **MORE THAN 3.5 HOURS**, then data elements in columns **I through Q** are **not** required for reporting. Collecting this data will assist in determining the proportion of patients who present to the hospital within the "window of opportunity". Knowing the true numerator for IV lytic treatment and denominator for your population informs of your possible "missed opportunities" and will serve as a key metric for community education to improve the proportion of patients who present within the "window of opportunity" for treatment. Data collection for #1-6 applies to all patients admitted with ICD-10 diagnoses codes of I63.xxx (Acute Ischemic Stroke), I60.xx (Subarachnoid Hemorrhage), I61.x (Intracerebral Hemorrhage), or G45.9 (Transient Ischemic Attack). **Columns V-Z are mandatory for all patients who arrive within 24 hours of LSN.***

9) **Time of ED MD Evaluation =** Column I
This is the first documented date and time (military time) which indicates the ED physician had a face-to-face encounter with the patient with suspected stroke who presents within the first 3.5 hours after last seen normal. **The goal is <10 minutes** from the Time of Arrival to the Emergency Department Door. It is ok if another provider documents the ED physician saw the patient.

10) **Time of communication with Neurological Expertise** = Column J
This is the date and time (military time) when a neurological expert is first contacted (in person, by telephone, or by telemedicine) by a physician at the LERN Acute Stroke Ready Hospital to discuss the patient with suspected stroke who presents within the first 3.5 hours after last seen normal. The best practice **goal is <15 minutes** from the Time of Arrival to the Emergency Department Door. A LERN Acute Stroke Ready Hospital may have a neurological expert who prefers to have the CT scan and laboratory findings available prior to the first communication. LERN strongly recommends that LERN Acute Stroke

Ready Hospital initiate contact with their neurological expert to inform him or her of the patient with suspected stroke within the first 15 minutes from the Time of Arrival to the Emergency Department Door and document this time. A follow-up communication with the neurological expert can follow when the CT scan +/- laboratory findings are available. If your ED doc has sufficient experience and expertise AND accepts the role of neurological expert for the purposes of determining tPA/TNK and thrombectomy eligibility, then the time of ED doc evaluate would be the same as the time of accessing your neurological expertise.

11) **Credentials of Neurological Expertise** = Column K
Please indicate: Neurologist, Vascular Neurologist, Emergency Medicine Physician, or Other. A drop-down box (pick list) is provided on the electronic data collection tool. This is the person who will be making the treatment determinations.

12) **Time of CT Performed =** Column L
This is the date and time (military time) of the time stamp on the baseline CT scan of the head. The **goal is <20 minutes** from the Time of Arrival to the Emergency Department Door in at least 50% of patients who present <3.5 hours from LSN.

13) **Time of CT Interpretation =** Column M
This is the date and time (military time) when the interpretation of the baseline CT scan of the head becomes available by whomever is responsible for reading it (on-site or off-site radiologist or neurological expert, provided he or she is credentialed for interpretation of neuroimaging at the center). The **goal is <45 minutes** from the Time of Arrival to the Emergency Department Door for patients with suspected stroke who present within the first 3.5 hours after LSN. Each Acute Stroke Ready Hospital defines who is credentialed to interpret the CT scan via internal hospital by-laws.

14) **Time to Labs Complete =** Column N
This is the date and time (military time) when necessary laboratory values are available for patients with suspected stroke who present within the first 3.5 hours after LSN, which may include platelet count, PT/INR (PTT, when appropriate), and glucose. The **goal is <45 minutes** from the Time of Arrival to the Emergency Department Door. The time documented for labs resulted can be the time of the blood glucose measurement, if this is the only required test for your patient; however, you should insure that you can obtain necessary additional lab tests for the population of patients who require them in order to determine eligibility for IV alteplase.

NOTE: The American Heart Association/American Stroke Association has issued this statement in the 2013 Guidelines for the Early Management of Patients With Acute Ischemic Stroke: "Although it is desirable to know the results of these tests before giving intravenous recombinant tissue-type plasminogen activator, fibrinolytic therapy should not be delayed while awaiting the results unless:

i. there is clinical suspicion of a bleeding abnormality or thrombocytopenia,
ii. the patient has received heparin or warfarin, or
iii. the patient has received other anticoagulants (direct thrombin inhibitors or direct factor Xa inhibitors)."

15) **Time of tPA/TNK Bolus =** Column O
This is the date and time (military time) when the bolus of tPA/TNK is pushed IV in the patient with suspected stroke who presents within the first 3.5 hours after last seen normal. The **goal is <60 minutes** from the Time of Arrival to the Emergency Department Door and represents the "Door-to-Needle time". Every minute, up to 2 million brain cells are destroyed during a large artery occlusive stroke. Systematic improvement in the Door-to-Needle time should be a priority for all LERN Stroke Centers. Feedback

reports from the LERN Stroke Medical Director will push for efforts to reduce the median door-to-needle time, in recognition of the new target door-to-needle time of 45min (AHA Target Stroke).

16) **Reason why patient who presents in less than 3.5 hours of last seen normal (LSN) not treated with tPA/TNK =** Column P
The LERN Documentation Tool lists the following pick list to facilitate tracking of this metric:

- Symptoms completely resolved
- Hemorrhage on CT scan
- Unable to treat within 4.5 hours of LSN
- Stroke mimic
- Mild deficits which are not disabling
- Ischemic stroke within 3 months
- Severe head trauma within 3 months
- Recent major trauma, not involving the head within 14 days
- Intracranial or intraspinal surgery within 3 months
- Recent major surgery within 14 days
- History of ICH
- Suspicion of SAH
- GI malignancy or GI bleed within 21 day
- Platelets <100K
- INR >1.7
- Elevated PTT
- Full anticoagulation (treatment dose of LMWH, thrombin inhibitor, or factor Xa inhibitor; prophylactic doses of LMWH are not a contraindication)
- Active use of GIIb/IIIa inhibitor
- Other known bleeding diathesis
- Infective endocarditis
- Aortic arch dissection
- Intra-axial intracranial neoplasm

If the BP or glucose could not be controlled in time to treat by 4.5 hours, the option of "unable to treat within 4.5 hours of LSN" would cover these scenarios. Delayed diagnosis is also covered under "unable to treat within 4.5 hours of LSN". Stroke mimic would include seizure.

17) **Reason why tPA/TNK administration was delayed =** Column Q

Recognizing that at times there are justifiable reasons for delay in thrombolytic administration causing facilities to miss the 60-minute window, the following pick list has been added. *Please note, some of these delays will exclude your thrombolytic administration time from your data, and some will not*:

- Ongoing HTN despite 2 or more IVP or IV drip initiated
- Further dx evaluation to confirm stroke in pt w/ blood glucose <50
- Further dx evaluation to confirm stroke in patients who present with seizure
- Further dx evaluation to confirm stroke in patient who have other major metabolic disorder – Include other major metabolic disorder in comment section
- Management of cardiopulmonary arrest, respiratory failure (requiring intubation), major trauma/bleeding event of the patient you are considering treating for stroke
- Management of other emergent/acute condition of the patient you are considering treating for stroke – Include other emergent/acute condition in comment section

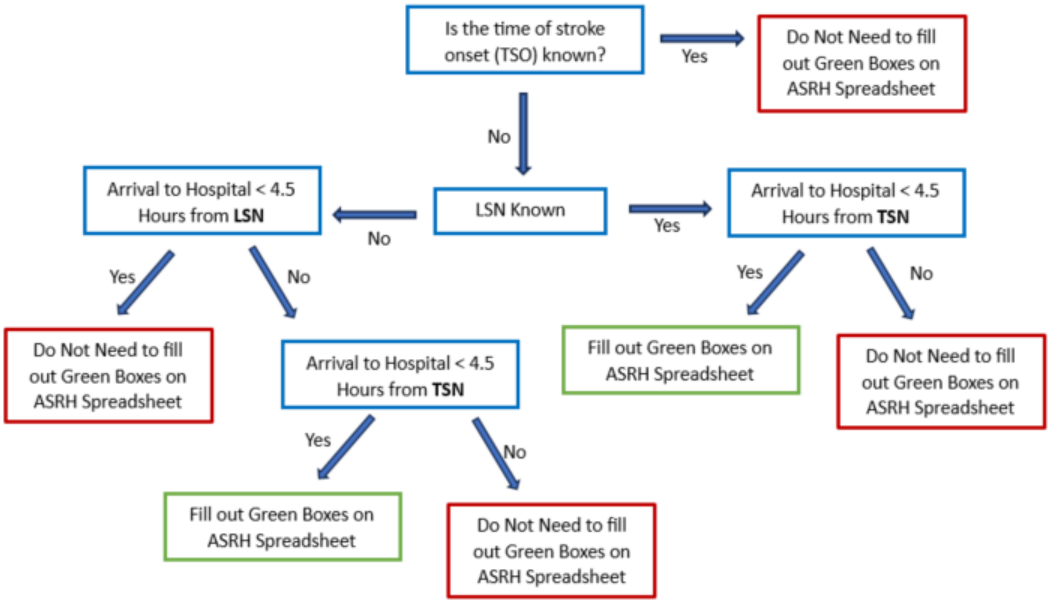
- Eligibility initially unclear due to timeline evolved after discussion with family/friends
- Eligibility initially unclear due to unclear recent procedure/surgery
- Eligibility initially unclear due to incomplete history
- Initial refusal by patient or family
- Consent delay due to patient wanting to discuss with family/proxy/spiritual guide first
- Consent delay due to inability to contact family/proxy
- Wake-up or Unknown symptom onset requiring additional imaging to determine eligibility
- Difficulty obtaining IV access
- Delayed/missed diagnosis
- Equipment related delay
- Provider wanted additional imaging to confirm stroke before treating (excluding glucose < 50, seizure, or major metabolic disorder)
- Social/Religious beliefs

The green cells have to do with patients who presented with stroke symptoms and their onset is unknown. Please use this algorithm to decide which patients need to be included.

Unknown Time of Stroke Onset Stroke Data Collection Algorithm

ACUTE STROKE READY HOSPITALS

LSN = Last Seen Normal
TSN = Time Symptoms Noted
TSO = Time of Stroke Onset



18) **Reason Why Advanced Imaging Not Pursued** = Column R
Leave blank if you pursued advanced imaging. If you do not pursue advanced imaging, you will need to choose an option from the drop down provided. These are all potential reasons that advanced imaging was not pursued.
    - Other standard lytic contraindication (includes complete stroke on CT and ICH on CT)
        - These contraindications would be those listed in bullet 16, these are all reasons that it is not appropriate for a patient to receive an IV lytic
    - Presence of LVO and need for emergent intervention
    - Advanced imaging not available
    - Patient not eligible for MRI
    - Protocol not pursued with no clear reason

    If you answer column R, STOP, there is no need to place an answer in the columns following (S-U. If you leave Column R blank, please complete columns S-U.

19) **Imaging Used to Determine Eligibility for IV Lytic** = Column S
A drop down menu will allow selections for CT, CTP or MRI. Only choose CT if this is what was used for IV lytic determination.

20) **Time Imaging for Unknown Stroke Onset completed** = Column T
This is the time (military time) that the CT, CTP, or MRI is completed to determine eligibility for IV lytic. (Not when the imaging was interpreted)

21) **Reason why patient not treated with IV lytic after advanced imaging** = Column U
This will give insight as to why the patient with a wake up or unknown TSO stroke did not receive IV lytic after the use of advanced imaging. Only place data if IV lytic not given. The following drop down list is available:
    - CTP not favorable, no/small penumbra/salvageable tissue
    - MRI not favorable, completed stroke (no DWI-FLAIR mismatch)
    - MRI did not support stroke/stroke mimic
    - Patient/family refusal

The following variables should be completed for all patients who present <24 hours from LSN.

22) **Mode of arrival =** Column V

    A drop-down menu allows for selection of private vehicle, ambulance, air ambulance, and unknown.

23) **NIHSS total score =** Column W

    The NIHSS exam should be performed by certified examiners on all patients with suspected stroke based on 2018 AHA Guidelines for the Emergency Management of Patients with Acute Ischemic Stroke. The total score, performed prior to thrombolytic, if given, should be recorded.

24) **Was the patient screened for LVO? =** Column X

    A drop-down menu allows for selection of yes, no, or not applicable (not applicable applies only to symptoms resolved, stroke mimic, hemorrhage).

25) **Method of screening patient for LVO. =** Column Y

A drop-down menu of check boxes allows for multiple choices including VAN (Visual, Aphasia, Neglect assessment), CT Angiography (CTA), other clinical scale or score (RACE, FAST-ED, CPSS, total NIHSS), and other vascular imaging (MRA, TCD, and/or angiography).

26) **Result of LVO screening =** Column Z

A drop-down menu of choices LVO Positive and LVO Negative. If the patient is LVO Positive, you will need to fill out the orange boxes in columns AA-AH. If the patient is VAN positive and the CTA reveals no large vessel occlusion, please document as LVO negative.

27) **Decision Time** = Column AA

This is the date and time (military time) that the decision to transfer the patient was made for or against emergent transfer for possible thrombectomy for a patient who screen positive for LVO. ***We want to know how long it took for your site to decide that the patient needed to be transferred. Ideally, this is within minutes of arrival.***

If the patient screened negative for LVO, leave blank (ASRH), even if the patient was transferred for higher level of care.

If the decision was made against transfer for possible thrombectomy, do not include the time of acceptance or time of transfer/departure/door out, even if transferred, and include the reason the patient was determined to not be a candidate for thrombectomy in the Details Column.

28) **Transfer Request Time =** Column AB

Enter the date and time of transfer request in military time or n/a if the patient was not transferred. Leave the field blank if the time cannot be determined. If your site does not have a consistent method for source documentation of the time of transfer request, then this is a target for process improvement.

Ideally, the transfer request will be within minutes of the decision time, for patients who screened positive for LVO and were presumed to be candidates for thrombectomy. ***We want to know how long it took from the time you decided the patient needed to be transferred until the time you initiated that process.***

29) **Acceptance Time** = Column AC

Enter the date and time (military time) that the receiving hospital agreed to take the transfer.

If the LERN Communication Center was used to facilitate acceptance, please indicate this in the Details Column.

If it took so long to get accepted, that the patient was no longer transferred with the intent of offering thrombectomy, leave this blank and indicate the patient could not be transferred in time for thrombectomy in the Details Column.

30) **EMS on Scene Time** = Column AD

Enter the date and time (military time) that EMS arrived to transfer the patient. ***This variable is required only for sites who are active in the remediation process for DIDO.***

This is the time that the secondary transfer EMS ground or air ambulance arrived to transfer the patient for thrombectomy to a thrombectomy center.

31) **Transfer time =** Column AE

Enter the time of transfer request in military time or n/a if the patient was not transferred.

32) **Reason/s for transfer delay =** Column AF

A drop-down check box allows for multiple choices for:

- Management of cardiopulmonary arrest, respiratory failure (requiring intubation), major trauma/bleeding event
- Initial refusal of treatment or transfer by patient or family
- endovascular eligibility initially unclear due to timeline
- Delayed/missed recognition of LVO due to altered LOC, seizure, other metabolic disorders
- Delayed/missed recognition of LVO due to initial negative VAN screening
- Delay in determination of IR candidacy by accepting facility
- Delay in vascular imaging completion or interpretation
- Delay in your facility initiating transfer
- Delay in finding accepting center independently
- Delay in finding accepting center through LCC
- Bed unavailable at initial requested facility (?add multiple facilities)
- Delay in EMS arrival due to delayed dispatch
- Delay in EMS arrival due to weather conditions
- Delay in EMS arrival due to unit not available
- social/religious beliefs

33) **Reason Patient Not Transferred for Thrombectomy** = Column AG

If a patient presents within 24 hours of LSN and screens positive for LVO (clinical and/or imaging), but has been ruled out for thrombectomy, please document why the patient is not being transferred for thrombectomy .

- Large core infarct on imaging
- No large vessel occlusion identified on imaging
- No ischemic penumbra
- Chronic occlusion not amenable to IR
- Distal occlusion not amenable to IR

34) **Optional field for details of reason/s for transfer delay =** Column AA

This is a free text cell which allows you to provide any information you think is helpful in understanding what happened. If additional details are thought to be necessary or add value to understanding your barrier/s to efficient door in-to-door out, this field allows for a free-text description.

Data Submission to LERN

LERN expects to receive quarterly data report including Data Elements 1-6 (Columns A-F) for all patients presenting with suspected stroke and Data Elements 7-12 (Columns G-L) for patients with suspected stroke who presents within the first 3.5 hours after last seen normal. If IV lytic is given, the time of IV lytic bolus must be documented in Column M. If IV lytic is not given for a patient with suspected stroke who presents within the first 3.5 hours after last seen normal, a reason must be documented in Column N. For all patients

who present within the first 24 hours of last seen normal, the expanded data elements in Columns P-X must be documented. The maximum interval between close of a quarter and receipt of the data is 30 days. Email the completed data form quarterly to Justin.Schleis3@LA.GOV.

Date of end of quarter	Date data report is last acceptable
March 31st, 2022	April 30th, 2022
June 30th, 2022	July 31st, 2022
September 30th, 2022	October 31st, 2022
December 31st, 2022	January 31st, 2023

How much time is involved in the data collection process?

The data collection (if retrospective) would take a maximum of 20 minutes per case, for patients who present within the first 3.5 hours from last seen normal. For cases only requiring Dummy ID, (those presenting >24hrs LSN), time of last seen normal, and time of Arrival to the Emergency Department Door, each case would take a maximum of 5 minutes.

To get a better estimate of your time commitment:

1. Ask one of your hospital coders to pull a list of all patients with stroke diagnosis codes over the last 3 month period. The *ICD-10 diagnoses codes of I63.xxx (Acute Ischemic Stroke), I60.xx (Subarachnoid Hemorrhage), I61.x (Intracerebral Hemorrhage), or G45.9 (Transient Ischemic Attack)*.
2. Get with the Guidelines (GWTG) estimates of % patients presenting within 3 hrs is <25%. Calculate what 25% of all patients with stroke diagnosis codes would represent. This would be an estimate of total quarterly sample size.
3. Divide that # by 3 (3 cases can be collected per hour) => estimated # hours per quarter devoted to the process of data collection.

Who should be responsible for collecting this data?

This will vary and is to be determined by each hospital. Some facilities assign data collection to the following existing employees:

- Stroke director
- Stroke coordinator
- Quality department
- Emergency department nursing director
- Emergency department clinical supervisor
- Emergency department charge nurse

What are your options if you decline participation?

1. Change attestation to Stroke Bypass Hospital

How can you improve the acquisition of these data elements?

One tip from your LERN Stroke Medical Director is to create a template in the ED medical chart (whether paper or electronic) that includes these timestamp data points and encourage your ED staff (MD and RNs) to document the data points that consume time when collected retrospectively (time last seen normal, time of Arrival of Emergency Department MD, time of communication with Neurological Expertise).

******LERN Stroke Data will be accumulated and organized in summary form. LERN will not release any identified data related to a participating hospital. If disseminated, LERN data will be in aggregate form.******