Introduction:

Welcome to the Arkansas Stroke Registry! This document provides background information on the Arkansas Stroke Registry (ASR), also referred to as simply "The Registry" and information on stroke and stroke care. Websites are embedded within the text that include important information to assist with your participation in the ASR. Additional resources are also available and will be given to you and your team as needed.

The ASR staff provides:

- Data entry information
- Tips on maximizing the use of the database
- Pre-hospital care strategies and educational support
- Registry measure adherence strategies
- Strategies to improve dysphagia screening
- Support during the Arkansas Stroke Ready Hospital (ArSRH) designation and redesignation process
- Tips and tools to assist the Stroke Team in improving stroke care
- Access to grant information and paid services (data entry through the American Data Network)

The Arkansas Department of Health (ADH), in collaboration with the American Heart Association/ American Stroke Association, manages a stroke registry by collecting real time data on stroke treatment from hospitals serving Arkansas. Other key partners of the ADH include the Institute for Digital Health & Innovation (IDHI), Virtual Emergency Support, Mercy Telestroke, and the American Data Network (ADN). Participation in the Registry offers support for hospitals to improve and maintain their processes and provide excellent care to stroke patients.

Using de-identified stroke data, the Registry strives to accomplish the following:

- Optimize the quality of stroke care for all Arkansans
- Decrease death and disability associated with acute stroke
- Reduce disparities in stroke patient care
- Increase public awareness of stroke treatment and prevention

The ADH launched the ASR to work with hospitals treating Arkansans through improving patient care. This program allows ADH to partner with facilities to help track, measure, and optimize the quality of stroke care for all Arkansans. The ASR staff works with hospital providers to collect and use data to identify both successes and opportunities for improvement in stroke care. Participation in the ASR is required for a hospital to receive designation from ADH as an ArSRH. A list of hospitals that participate in the Registry can be found here: Arkansas Stroke Registry Participating Hospitals Arkansas Department of Health

Stroke Contacts:

ADH provides Quality Improvement (QI) support to maximize adherence to the performance measures captured in the ASR. The primary ADH contact is Lindsay Sterling, RN, BSN. Lindsay is the Arkansas Stroke Nurse Coordinator and may be reached at Lindsay.Sterling@arkansas.gov. The secondary contact is David Vrudny, MPH, CPHQ. David is the Stroke/STEMI Section Chief and may be reached at David.Vrudny@arkansas.gov. Joanne LaBelle, RN, MS, CPHQ, HRM provides technical assistance and QI support for hospitals participating in the ASR and may be reached at Joanne.Labelle@arkansas.gov.

AHA provides assistance using the *Get With The Guidelines®*-Stroke Patient IQVIA Reporting Platform (GWTG-S IRP) for chart abstraction, data entry, reporting, analysis and QI. Mary Jo Sikkema is the AHA Quality Improvement Manager for Arkansas and may be reached at Mary.Sikkema@heart.org. In late 2022 through early 2023 GWTG underwent a transition to a new platform. Training was provided by AHA/IQVIA during the transition period and the user guides and webinars are available to assist you.

UAMS/ IDHI /Mercy Telestroke partner with the ADH and AHA to optimize stroke patient care and outcomes. Sites participating in IDHI and Mercy Telestroke programs are equipped with telemedicine technology to connect with vascular neurologists 24/7 and receive support and ongoing education. The Director of Clinical Programs for IDHI is Renee Joiner, RN, BSN (CRJoiner@uams.edu). The Stroke Program Director of Operations is Lori Berry, MNSc RN, CNOR (BerryLori@uams.edu). The point of contact for the Mercy Telestroke program is Nicole Harp, RN, SCRN (Nicole.Harp@mercy.net).

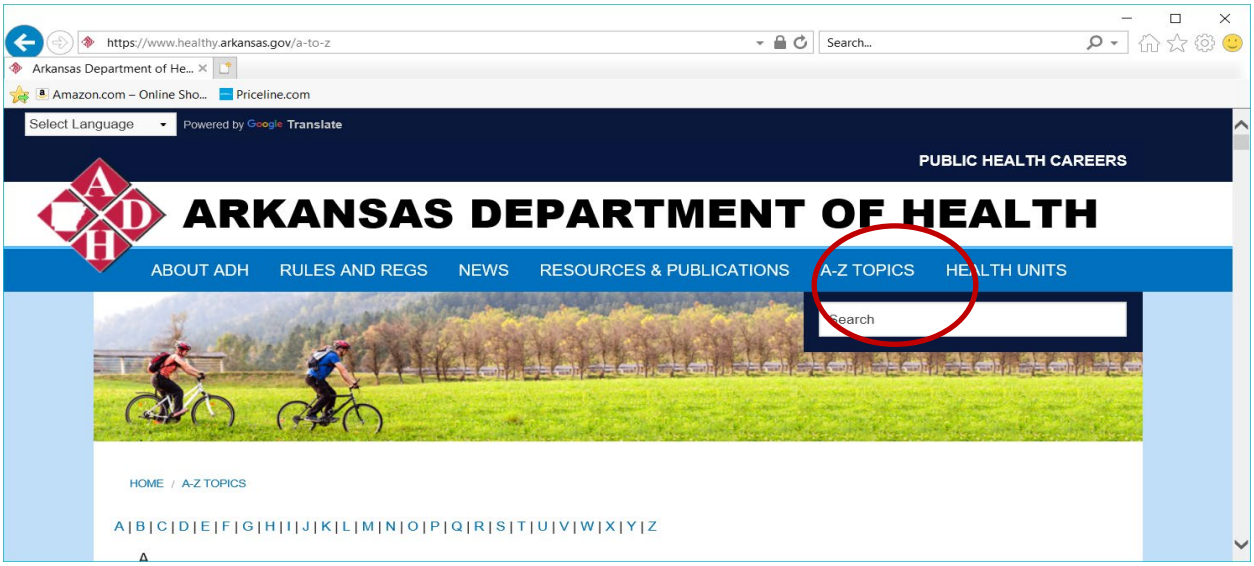
American Date Network (ADN) is a contractor for ADH and provides chart abstraction assistance into the GWTG Stroke database for qualifying hospitals. Stroke coordinators of hospitals using ADN as data abstractors are required to provide access to the patient's medical record, including all needed information. The stroke coordinator is expected to review the measure adherence for use in QI activities and complete a review of a sample of patients entered to ensure the data are entered completely and correctly.

Quintiles/IQVIA is the software company which developed the GWTG-S IRP and provides technical support for the software, including assigning user IDs and resetting passwords. Quintiles/IQVIA customer support may be reached by calling 888-526-6700 or by email at InfosarioOutcomeSupport@quintiles.com.

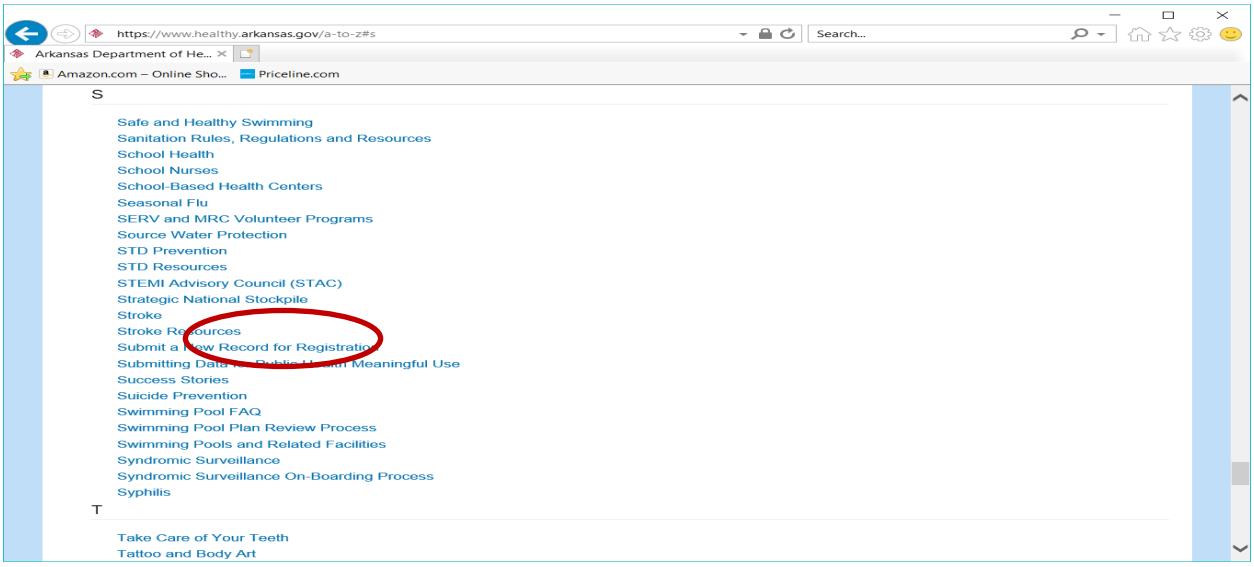
Arkansas Department of Health (ADH) Website:

1. The ADH website includes information on a variety of topics. The top tabs include:
    - About ADH
    - Rules
    - News
    - Resources and Publications
    - A-Z Topics
    - Health Units

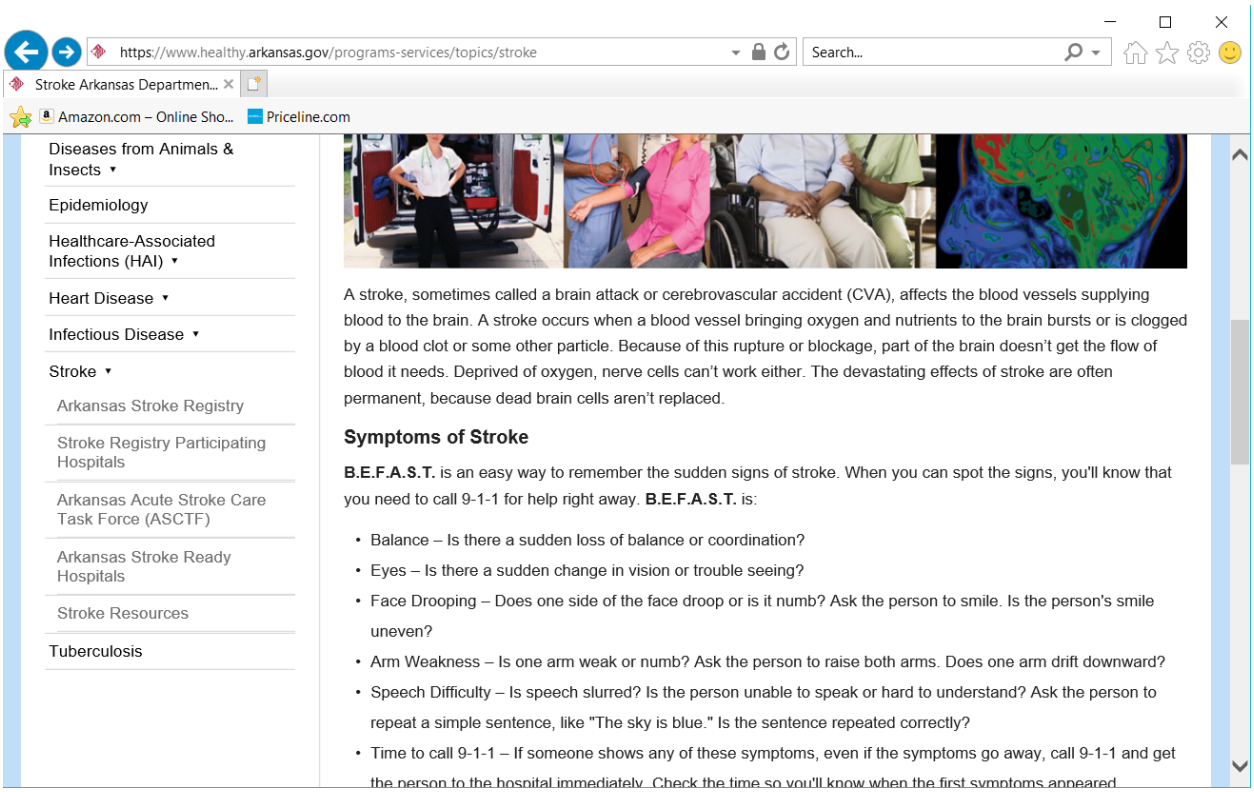
2. Click-on “A-Z Topics.” Then click-on “S” and scroll down until you see the 3 stroke links.



3. Clicking on “Stroke Resources” takes you to a variety of helpful resources that are available.



4. After clicking on the “Stroke” link you are routed to the stroke homepage. There are many additional links and tools throughout this page. Quick links on the left navigation tool include:
   - Arkansas Stroke Registry
   - Stroke Registry Participating Hospitals
   - Arkansas Acute Stroke Care Task Force (ASCTF)
   - Arkansas Stroke Ready Hospitals
   - Stroke Resources



Measures of Success:

Data are collected into the GWTG-S IRP and entered into the Quintiles/Outcome database. As you begin your role as a stroke coordinator, you need access to the database. Even if you do not personally input patient data in the registry, having access allows you to run reports and review the measure descriptions and coding instructions which include measure definitions, measure inclusions and exclusions as well as other important information. *NOTE: up to 10 employees per hospital may be set up with access to either run performance reports or input patient cases.*

"Real-time" aggregate data as well as patient-level data are available immediately after entry. The stroke program has identified specific CDC Consensus Measures. These include selections from the acute, inpatient, and discharge measures. Monitoring these measures provides information on adherence for the stroke continuum of care. Additional data elements are also monitored, including information related to the timeliness of care. Examples of these additional data elements are "Door to CT Time in 25 minutes or less" and "Time to intravenous thrombolytic therapy in 60 minutes." It is important to review the organization's adherence on selected measures monthly. Each hospital can compare its results with the aggregate results of all participating Registry hospitals.

Requesting Access to GWTG:

Access to GWTG may be requested by contacting Mary Jo Sikkema (Mary.Sikkema@heart.org) or Brittany Henson (Brittany.Henson@heart.org).

Your stroke data is entered directly into the GWTG-S IRP database. All necessary hospital staff, providers and physicians that require access to the data need to request their own individual usernames and passwords. GWTG training was provided by IQVIA during the transition and is available at GWTG-Stroke PMT to IRP Transition Packet - Smartsheet.com. There you will find documents and webinars to assist you. If additional assistance is needed related to collecting the data elements, generating graphs, case entry identification, using the IRP, or understanding the coding instructions, contact Kristen Isom (Kristen.Isom@heart.org) with AHA.

Additional updates are sent out periodically from IQVIA via email to all user accounts. Presentations may also be provided by AHA and the Registry staff. Some of the more formal presentations will offer continuing education credits for EMS, RNs, and physicians. These sessions are open to all Stroke Team members and other appropriate hospital or agency staff.

Case Identification and Entry:

Identification of patients may be done concurrently or retrospectively. Often a combination of both concurrent and retrospective review is done. A partial concurrent review is recommended as the concurrent process allows for addressing care issues while the patient is still hospitalized. A retrospective review is done after discharge. For the retrospective review, the patient for entry is typically identified using the coding process. This process provides a list of patients to be reviewed for inclusion into the Registry. Patients on the list may have been missed during the concurrent review process or if a retrospective-only process is used, provides a list of stroke and TIA patients. Included on the website is a list of the diagnosis-related groups (DRGs) used for case identification. Because coding is a financial process, physician documentation supersedes coding. If the physician's documentation does not indicate that the patient's clinical discharge diagnosis is stroke or TIA, the patient does not need to be entered. Resource documents on concurrent review and methods of identifying patients appropriate for inclusion into the data base are available. You may request these documents from your ADH contact.

Registry Program Guidelines:

Abstract, enter and save 100% of patient records as complete within 90 days of patient discharge (either through internal staff or through ADH's external contractor ADN). Included in the database are patients with a final discharge diagnosis of TIA, ischemic stroke, hemorrhagic stroke, and stroke not otherwise specified (NoS). This includes patients transferred to another acute care facility; case inclusion criteria are listed in the GWTG-S IRP Coding Instructions. Please note, patients entered as stroke NoS are rare.

This diagnosis is typically only appropriate for patients presenting with both a hemorrhagic and ischemic stroke.

Ensure the additional 5 data fields that were added in July 2018 to GWTG are entered as applicable:

- Stroke Band ID
- EMS Agency Name Transporting Patient from Referring Hospital
- EMS Agency Name Transporting Patient to Receiving Hospital
- Hospital name if patient transferred from your ED to another hospital
- Hospital name if patient transferred from another hospital

Re-abstraction Guidelines (updated March 2022):

Re-abstraction is a requirement for participation in the ASR and assists in the evaluation of data coding quality, accuracy, and completeness. The number of re-abstractions required to be completed is determined by your facility's annual volume of stroke cases. A re-abstraction template can be requested by contacting ADH staff. The number of required re-abstractions are determined by the following:

- 1-100 total stroke cases per year = 5 charts to be re-abstracted
- 101-200 total stroke cases per year = 7 charts to be re-abstracted
- >200 total stroke cases per year = 10 charts to be re-abstracted

Ensure your stroke cases are re-abstracted for patients discharged between July – June every year, either through internal staff or through ADH's contractor ADN. Hospitals that administer tissue plasminogen activator (IV-alteplase) must include at least one IV-alteplase patient record in the re-abstraction sample. If your hospital would like assistance with re-abstractions from the ADH's contractor, your hospital will need to request assistance to arrange a time to complete this project. If you prefer to complete re-abstractions internally, a secondary abstractor needs to complete the re-abstractions. The secondary abstractor must be identified, and contact information uploaded into the template.

ADN is happy to complete the re-abstractions for your facility, paid for 100% by the state. Please reach out to Nancy Cole with ADN at ncole@americandatanetwork.com to request this service.

Arkansas Department of Health Stroke Awards:
ADH awards hospitals, EMS agencies, and geographic regions for their performance documented in GWTG. The period of performance is based on the ADH fiscal year and uses data that is collected beginning in July to the following June.

Hospital awards and criteria:

- Stroke Band Award - Given to the small, medium, and large hospital with the highest percentage of documentation of stroke band identification number, based on percentiles.

- Door to CT - Given to the small, medium, and large hospitals with the lowest average door to CT times, filtered to include only patients presenting with last known well time within 24 hours of arrival, based on percentiles.
- CDC Defect-Free Care – To qualify for this award, a hospital must be designated through ADH or a national accreditation body. The top performing hospitals within each category of small, medium, and large, based on percentiles, will receive the Defect-Free Care award. The 11 measures that comprise the "CDC defect-free stroke care" measure include (1) IV Thrombolytic Arrive by 3.5 Hour, Treat by 4.5 Hour; (2) Early Antithrombotics; (3) VTE Prophylaxis; (4) Antithrombotics; (5) Anticoagulation Therapy for Atrial Fibrillation/Flutter; (6) Smoking Cessation Counseling; (7) Dysphagia Screening; (8) Stroke Education; and (9) Rehabilitation Considered; (10) Intensive Statin Therapy; (11) Time to IV thrombolytic therapy in 60 minutes. Note that the American Heart Association also offers awards based on performance documented in GWTG. For details on these awards, contact Kristen Isom with AHA (Kristen.Isom@heart.org).

Hospital Size	Small Bed size	Medium Bed size	Large Bed size
Stroke Band Award	X	X	X
Door to CT Award	X	X	X
CDC Defect-Free Care Award	X	X	X
***A small size hospital is defined as 0-50 beds; medium size is 51-150 beds and large is greater than 150 beds. NOTE: A minimum of 5 patients must be seen within the period of performance to qualify for an award.**			

EMS Agency Awards and Criteria:

- Stroke Band Award - Given to the low-medium volume, and high-volume EMS agency with the highest percentage of documentation of stroke band identification numbers for suspected stroke cases, based on percentiles.
- Pre-notification - Given to the low-medium volume, and high-volume EMS agency with the highest percentage of documentation of pre-notification, based on percentiles. This will be determined based on data in the AR Stroke Registry for the pre-notification data field and hospital identification of the EMS agencies meeting this level of performance.

EMS Agency		
Call Volume*	Low-Medium	High
Stroke Band Award	X	X
Pre-notification Award	X	X
***A low-medium stroke call volume EMS service is defined as having at least 3 and up to 20 stroke runs within the period of performance. A large volume EMS service is defined as having greater than 20 stroke runs within the period of performance.**		

State Regions Awards and Criteria:

- Pre-notification - Given to the region with the highest percentage of documentation of pre-notification.
- Stroke Band Award - Given to the region with the highest percentage of documentation of stroke band identification numbers.

- Door to CT - Given to the region with the lowest average door to CT times, filtered to include patients with last known well to arrival times to arrival within 24 hours.

Regional Locations Across Arkansas Awards*	
Pre-notification Award	Region with the Highest % Documentation
Stroke Band Award	Region with the Highest % Documentation
Door to CT Award	Region with the Lowest Average Door to CT Time (in minutes)
***Regions are defined as one of the seven geographical regions of Arkansas including: AR Valley, Central, Northwest, North Central, Northeast, Southwest, and Southeast.**	

Transitions of Care Awards and Criteria:

- This award is available to be received by up to three healthcare organizations or individuals involved with stroke patient transition of care (including community paramedics, nurses, physicians, etc.) This recognition honors the awardee for the exceptional work they did with stroke patients and/or their families as part of the transition of care for the patient. Nominations will be accepted via survey to include the reason for the nomination and justification, and a review team will decide who is to receive the award.

Transitions of Care*	
Organizations and/or individuals (including Community Paramedics, Nurses, Physicians and others) may be nominated	Organization and/or Individual #1
	Organization and/or Individual #2
	Organization and/or Individual #3
***Surveys will be reviewed for the exceptional care and work provided for stroke patients and/or their families. Three winners will be chosen.**	

Stroke Regional Advisory Council:

The Stroke Regional Advisory Council (SRAC) was formed to address region-specific issues as well as to provide local guidance and support for hospitals with QI challenges. The SRAC Team, comprised of EMS staff and hospital stroke coordinators, is supported by Regional Leaders that were elected by the SRAC team members. The leaders share areas of strength and weakness as well as successful strategies. The leaders organize regional meetings and assign projects to the members. Additionally, the leaders make connections with leaders from the other regions across the state and bring best practices and other useful information back to their region. The leaders share blinded regional data, comparing hospitals to the regional, state, and U.S. benchmarks on key stroke care performance. The leaders and members assist with QI efforts to improve regional performance. The leaders and their work are supported by ASR staff. Additionally, leaders provide a progress report on their region during the Stroke Task Force meetings. SRAC Teams should meet at least quarterly. A list of contacts and a regional map may be viewed here https://www.healthy.arkansas.gov/images/uploads/pdf/STROKE_CONTACTS_.pdf

More information on SRAC can be found here https://www.healthy.arkansas.gov/programs-services/topics/stroke-resources.

Stroke Bands:

Arkansas's Stroke Band system allows for the linkage of EMS and hospital statewide data and is a key component for driving continuous QI. The stroke bands are blue and have a different alpha-numeric sequence than the state trauma bands. Stroke band identifiers start with an "S" and are followed by six digits. They are applied by EMS for all suspected stroke cases validated by positive stroke scale score (BE FAST is recommended). The band is removed by hospitals staff if a stroke is ruled out. The hospital ED staff ensures stroke bands are applied to all confirmed stroke cases, including patients arriving by private vehicle and transfers. Hospital staff are responsible for inputting all stroke band IDs into the patient's electronic medical record and the ASR using GWTG. Stroke bands are shipped by the ADH Stroke Team to Arkansas Hospitals and EMS Agencies. To order your stroke bands, please send an email to stroke.bands@arkansas.gov letting us know how many stroke bands you are requesting and where they should be shipped, also include a contact person to receive them if different than the requestor.

Patient Educational Resources:

Educational materials are provided by AHA and may be accessed on the AHA or Quintiles/IQVIA website.

In addition, the IDHI / AR SAVES program at UAMS has free BE FAST stroke education materials. There are many different BE FAST items available (brain-shaped pencil erasers, pens, bookmarks and many more). To order the materials:

1. View the items that are available at http://arsaves.com/
2. Send an email to Olivia Wilson with UAMS (OWilson2@uams.edu) and state that your facility would like to place an order. Include your full name, email address, phone number, and shipping address.
3. You will receive a confirmation email when your account is set up.
4. Login and place your order. Olivia will reply asking what the event will be, the location, and expected attendees.

Stroke Program Assessment:

As a participant in ASR, the Registry staff may visit your facility to support your efforts and/or conduct an annual stroke program review.

Registry staff may conduct an onsite visit to:

- Meet with the stroke team, the physician champion, and the organization's leadership
- Conduct a mock stroke program review
- Support the coordinator by assisting with buy-in for the stroke program
- Assist with data from Quintile/IQVIA

The annual program review may be done onsite, through teleconferencing or Zoom / Microsoft Teams. All members of the Stroke Team are invited and encouraged to participate. The annual review process is standardized, however, for newly joined hospital staff, the agenda may be adjusted to meet the organization's specific needs.

The goals of an annual review are to:

- Discuss the role of the ASR initiate and define the role of each partner
- Review the CDC consensus measures and other related measures
- Discuss the successes and challenges related to measure adherence
- Identify the hospital's adherence relative to other ASR hospitals
- Identify opportunities for stroke program improvement
- Discuss Quintiles/IQVIA database and the availability of data
- Create an action plan to address the organization's identified challenges as well as the coordinator's education and training needs

Stroke Continuum of Care:

To facilitate timely stroke care, the pre-hospital phase is critical. The immediate identification of a suspected stroke patient in the field facilitates timely in-route assessment and hospital pre-notification to allow the receiving ED staff time to prepare prior to the patient's arrival. It is for this reason that the ASR includes pre-hospital providers in its scope. The ASR continues to increase the collaboration between pre-hospital and acute care providers to achieve the common goal of improving the care provided to stroke patients and their outcomes.

Hospitals and pre-hospital providers are encouraged to provide support in a community outreach approach. The purpose of community outreach is to educate the community on behavioral and health risk factors that increase the incidence of stroke. Additionally, as newer treatments for stroke patients are identified and adapted, informing the community builds trust in their healthcare system. Members of the community are more likely to seek care for themselves and others earlier if they are aware of the signs of stroke.

Assessing Stroke Severity:

In Arkansas, the pre-hospital providers use BE FAST (Balance, Eyes, Face, Arms, Speech, and Time) to report their findings to the receiving ED. The use of this scale in the pre-hospital phase assists in determining if the patient may be having a stroke. The components of the scale collect vital information needed by the ED to assess the patient's eligibility for IV-thrombolytics.

The GWTG database collects data on the National Institute of Health Stroke Scale (NIHSS). The NIHSS is a systematic assessment tool providing a qualitative measure of stroke-related neurologic defects. The scale is widely used as a clinical assessment tool to evaluate the acuity of stroke patients, determine appropriate treatment, and predict patient outcomes. Additionally, the NIHSS serves as a data collection tool for planning patient care, provides a common language for information exchanges among

healthcare providers, and provides severity adjustment for morbidity and mortality reviews. It is designed to be a simple, valid, and reliable tool that can be administered at the bedside by physicians, nurses, and therapists. Please visit http://www.nihstrokescale.org/ for additional information and to become certified to administer the NIHSS.

Advanced Stroke Life Support:

Advanced Stroke Life Support (ASLS) courses are available throughout the 7 Arkansas Stroke Regions for physicians, nurses, and EMS. To find out more information, please contact your local ASLS Training Center Coordinator for future class dates and registration.

- AR Valley – Mercy Hospital Fort Smith: Nicole Harp, 479-806-4175 nicole.harp@mercy.net
- Northeast and North Central AR – Baptist Health: Jeff Jeffries, 501-202-7914 jeff.jeffries@baptist-health.org
- Southwest AR – Wadley Regional: Dana Telg, 903-798-8028 dana.telg@steward.org
- Northwest AR – Mercy Hospital of NWA: Mary Tabor, 479-790-7970 mary.tabor@mercy.net
  Washington Regional: Susan McCartt, 479-461-7865 smccartt@wregional.com
- Central AR – Baptist Health: Jeff Jeffries, 501-202-7914 jeff.jeffries@baptist-health.org
  UAMS: Travis Hill, 501-603-1838 TBHill@uams.edu
- Southeast AR – UAMS: Travis Hill, 501-603-1838 tbhill@uams.edu

In Closing:

We are so pleased to have you join us! Our goals are to optimize the quality of stroke care and outcomes for all Arkansans and increase public awareness and use of 911 when stroke is suspected. By working together, we can optimize stroke care and celebrate success.

Please retain this welcome letter for future reference. Feel free to share this information with members of your Stroke Committee and providers caring for stroke patients. If there are additional questions about the ASR program, please contact Lindsay Sterling (Lindsay.Sterling@Arkansas.gov), David Vrudny (David.Vrudny@Arkansas.gov), or Joanne LaBelle (Joanne.LaBelle@Arkansas.gov).