**Washington State Emergency Cardiac and Stroke System**

**Hospital Name:**

**2023 Application for Level III Stroke Center Categorization**

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**Office of Community Health Systems**

243 Israel Rd. SE Mailing:

Tumwater, WA 98501-5570 PO Box 47853

[www.doh.wa.gov](http://www.doh.wa.gov) Olympia, WA 98504-7853

800-458-5281

DOH 346-064 December 2019

**The Washington State Emergency Cardiac and Stroke System**

**Guiding Principles**

The Washington State Emergency Medical Services and Trauma Care Steering Committee convened a work group to study emergency cardiac and stroke care in 2006. The work group included emergency medical services providers, emergency physicians, cardiologists, neurologists, nurses, and representatives from the Washington State Hospital Association, American College of Emergency Physicians, and the American Heart Association/American Stroke Association. In response to the study findings, the work group made recommendations for a statewide coordinated emergency cardiac and stroke system similar to the state’s Trauma System.

These principles guided the work group in developing recommendations:

* + - Prevention is the first line of defense against heart disease and stroke.
* Care is provided based on what is in the best interest of the patient.
* All Washington residents have a right to optimal care: timely identification, transport, treatment, and rehabilitation by emergency response and health care professionals trained according to best practice standards.
* Racial, ethnic, geographic, age, and socioeconomic disparities are addressed.
* Market-share is balanced by policies and strategies such as telemedicine that promote broad provider participation.
* Regional differences are recognized, but basic elements exist statewide.
* All components of the system participate in planning and quality improvement.
* Patient outcomes are valued, and data collection, analysis, and quality improvement practices demonstrate the quality that the system claims to provide.
* Cost-savings are achieved where possible.

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**I. General Information**

**What is the Washington State Emergency Cardiac and Stroke (ECS) System?**

The ECS System is a coordinated systems approach to improving emergency response and treatment for acute coronary syndrome,[[1]](#footnote-1) cardiac arrest, and stroke patients. The goal of the system is improve patient outcomes by reducing time to treatment and getting patients into a dedicated system of comprehensive care. The ECS System is based on the same principles as the Trauma System – get the right patient to the right place in the right amount of time to save lives and reduce disability.

State law passed in March 2010 authorizes the ECS System. The law is based on recommendations of the Emergency Cardiac and Stroke Work Group convened by the Emergency Medical Services and Trauma Care Steering Committee in 2006. The law required the Department of Health to support an emergency cardiac and stroke system by 2011, including cardiac- and stroke-specific protocols and destination procedures for emergency medical services (EMS), and encouraging hospitals to voluntarily participate in the system. To participate, hospitals self-identify their cardiac and stroke resources and capabilities by applying for categorization as a Level I, II, or III Stroke Center, or Level I or II Cardiac Center. These levels are defined by the recommendations of the Emergency Cardiac and Stroke Technical Advisory Committee, as required by the law.

**Why do we need a system for emergency cardiac and stroke care?**

Too many people become disabled or die from heart attack, cardiac arrest, and stroke because they don’t get treatment in time.

* Most strokes (80%) are caused by clots. In 2018, only 11 percent of this type of stroke were given the clot-busting drug t-PA, and less than 5 percent were treated with mechanical thrombectomy, the two best options for treating stroke.
* Primary percutaneous coronary intervention (PCI) is the most effective treatment for most people having a heart attack. PCI includes angioplasty and stenting. In Washington, less than half of all people who have a heart attack get PCI.
* Access to resources for diagnosing and treating heart attacks and strokes varies, especially in rural areas.
* Heart attack and stroke patients are often transported to the nearest hospital only to be transferred to another hospital. This can delay treatment for hours. Cardiac and stroke patients don’t have hours.

The ECS System addresses all of these problems by reducing time to life-saving treatments. It gets patients to facilities committed to providing the most timely and optimal evaluation and care. Heart attack and stroke patients treated in time will likely need less rehabilitation, suffer fewer disabling conditions like paralysis and congestive heart failure, and can often go home after their hospitalization.

**Why should my hospital participate?**

* EMS needs to know what cardiac and stroke resources hospitals have so they can get their patients to the right treatment in time. By participating, you will be
* Strengthening our emergency medical services system.
* Ensuring people get the treatment they need.
* Saving lives, reducing disability, and improving quality of life.
* The destination and triage tools EMS uses to determine where to take their patients direct them to transport patients only to participating hospitals. Exceptions to the destination triage guidance are for extremely unstable patients or when there is no other option within specified transport times.
* People in your community will benefit by having a participating hospital close by. They’ll know that if they go to your hospital, whether they are brought in by family or ambulance, that you’ll do the right thing for them. In some cases, that might mean immediately transferring them. In others, EMS might take them directly to another hospital if it means getting treatment that will save their lives and get them home faster.
* You’ll be part of the statewide effort to increase access to quality emergency cardiac and stroke care through an organized system of care. Washington is the only state in the country to have a statewide system for cardiac *and* stroke care.

**How will we know if the ECS System is successful?**

The 2010 legislation, codified in [RCW 70.168.150](http://apps.leg.wa.gov/RCW/default.aspx?cite=70.168.150), requires participating hospitals to “participate in internal, as well as regional, quality improvement activities.” It also requires “participation in a national, state, or local data collection system that measures cardiac and stroke system performance from patient onset of symptoms to treatment or intervention, and includes, at a minimum, the nationally recognized consensus measures for stroke.”

The legislation did not include authority or funding to establish a state data collection system. We can get at least an indication of the system’s success through existing data collection resources and quality improvement initiatives. Many hospitals are participating directly or indirectly in *Get With the Guidelines* for stroke (GWTG-S), the *Clinical Outcomes Assessment Program* (COAP) for heart attack, and the *Washington Cardiac Arrest Registry to Enhance Survival* for cardiac arrest.

The law also amended the EMS and Trauma System law to expand the scope of the EMS and Trauma Regional Quality Improvement (QI) programs to allow protected discussion and evaluation of regional cardiac and stroke systems and care delivery. All of the Regional QI programs have incorporated cardiac and stroke evaluation to some degree. Participating hospitals should send their cardiac and stroke coordinators to these meetings along with the trauma coordinators.

**How long is the categorization period?**

Three years.

**Can we change our categorization level?**

Yes, you can apply to change your level anytime. Request a current application from the department contact listed below.

**What if we no longer want to participate in the system?**

You can withdraw at any time. Send written notice to the department contact listed below.

**What if we no longer meet the categorization criteria?**

Notify the department as soon as your status changes, and send written notice to the department contact.

**Department Contact:**

Matt Nelson, 360-236-2816

Matt.Nelson@doh.wa.gov

Department of Health

Office of Community Health Systems

Attn: Matt Nelson

PO Box 47853

Olympia, WA 98504-7853

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**II. Application Process**

**To apply for categorization or re-categorization in the Washington State Emergency Cardiac and Stroke System as a Level III Stroke Center:**

1. **Certified Acute Stroke Ready Centers:** If your hospital is certified as an Acute Stroke Ready Stroke Center by one of the national accrediting organizations listed below, complete sections A and B of the application and mail them to the department contact listed on page 11, along with proof of certification from the accrediting organization indicating the certification period. If your hospital is not certified as a Acute Stroke Ready Center, please follow the directions at B. Non-Certified Hospitals.

* Joint Commission
* DNV GL Healthcare
* HFAP

1. **Non-Certified Hospitals:** Complete all sections of the application electronically, and prepare the required documentation.
2. Complete one application per hospital. One application for multiple hospitals or campuses in a hospital system is not acceptable. A completed application includes:

* Hospital and Personnel Profile
* Certification Statement
* Criteria Checklist
* Documentation Checklist
* Required Documentation.

1. Print out the completed application on 8 ½ x 11 white paper, double-sided where possible.
2. Get the required signatures on the Certification Statement.
3. Print out the required documentation in the order on the documentation checklist.
4. Place a labeled divider between each section of the application, and each article of documentation.
5. Make a copy for your own records.
6. Mail the completed application with documentation to:

Department of Health

Office of Community Health Systems

Attn: Matt Nelson

PO Box 47853

Olympia, WA 98504-7853

Street address (for FedEx, UPS, etc.):

111 Israel Road SE

Tumwater, WA 98501

We will review your application and confirm your categorization or re-categorization in writing or contact you if we have questions within 60 days. We’ll call the contact person listed on the Hospital Profile for questions.

**Questions?** Please call or email Matt Nelson360-236-2816, Matt.Nelson@doh.wa.gov.

**Thank you** for participating in the Emergency Cardiac and Stroke System and being a part of the statewide effort to ensure all Washington citizens and visitors have access to quality acute stroke care.

**III. Application for Level III Stroke Center Categorization**

***A.******Hospital and Personnel Profile***

|  |  |  |  |
| --- | --- | --- | --- |
| Hospital Name: | | | |
| EMS/Trauma Region\*: | | | |
| Mailing Address: | | City: | Zip: |
| Physical Address: | | City: | Zip: |
| Phone: | | County: | |
| Application Contact and Title: | | | |
| Phone: | Email: | | |

|  |  |
| --- | --- |
| Hospital Administrator/CEO: | |
| Phone: | Email: |
| Stroke Program Medical Director: | |
| Phone: | Email: |
| Stroke Coordinator: | |
| Phone: | Email: |
| ED Medical Director: | |
| Phone: | Email: |
| ED Nursing Director: | |
| Phone: | Email: |

**\*EMS/Trauma Region Key**

|  |  |  |
| --- | --- | --- |
| **Region:** | **Includes the following counties:** | **Contact name - email:** |
| Central | King | Rachel Cory – rachelcory@comcast.net |
| East | Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Adams, Whitman, Asotin, Garfield | Rinita Cook - Rcook@ncecc.org |
| North | Whatcom, Skagit, San Juan Island, Snohomish | Martina Nicolas - martina@northregionems.com |
| North Central | Okanogan, Chelan, Douglas, Grant | Rinita Cook - Rcook@ncecc.org |
| North West | Clallam, Jefferson, Kitsap, Mason | Rene Perret - rene@nwrems.org |
| South Central | Yakima, Kittitas, Benton, Franklin, Walla Walla, Columbia | Zita Wiltgen - zitawiltgen@screms.org |
| Southwest | Wahkiakum, Cowlitz, Clark, Skamania, Klickitat, South Pacific | Zita Wiltgen - swems@comcast.net |
| West | Pierce, Thurston, Lewis, Grays Harbor, North Pacific | Anne Benoist – anne@wrems.com |

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***B. Certification Statement***

I,       (CEO/COO), on behalf of       (hospital), voluntarily agree to participate in the Washington State Emergency Cardiac and Stroke System as a Level III Stroke Center. We will work with emergency medical services and other hospitals in our area to streamline triage and transport of stroke patients and participate in regional quality improvement activities, as available.

By my initials and signature, I certify that:

      The information and documentation provided in this application is true and accurate.

      We will participate in a state or national data collection system that measures stroke system performance from patient onset of symptoms to treatment or intervention, as required by RCW 70.168.150.

      We will notify the Department of Health immediately if we are unable to provide the level of stroke service we’ve committed to in this application.

      This hospital is certified as an Acute Stroke Ready Center by one of these national accrediting organizations (check one). Proof of certification is attached to this Certification Statement. **(Note: certified hospitals DO NOT have to complete the application other than Section A and B.)**

Joint Commission; Certification period:

DNV Healthcare Inc.; Certification period:

HFAP; Certification period:

**-OR-**

      This hospital meets the criteria to be categorized as a Level III Stroke Center as defined in the criteria checklist of this application, and provides these services 24/7.

Chair, Governing Entity (Hospital Board) Date

Chief Executive Officer Date

Stroke Program Coordinator Date

Emergency Department Medical Director Date

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| **Participation Criteria for Level III Stroke Center Categorization** | **Met** | **Documentation Requested** |
| --- | --- | --- |
| **Personnel** | | |
| Emergency Department personnel trained in diagnosing and treating acute stroke |  |  |
| Neurologist or physician experienced in cerebrovascular care available 24 hours a day, seven days a week: on-site within 20 minutes of notification of patient’s arrival; or by telemedicine (e.g., phone, video-conference) within 20 minutes of notification of patient’s arrival, and transfer protocols in place for appropriate cases.  Physician experienced in cerebrovascular care means a physician capable of the following with or without neurology support (via telemedicine is acceptable):   * diagnosing acute stroke, and * appropriate initial care, including providing t-PA according to current guidelines, and * providing appropriate inpatient care as needed |  |  |
| Radiologic Technologist |  |  |
| Staff (in-person or remotely) to read CT/MRI within 45 minutes of order 24 hours a day, seven days a week |  |  |
| **Diagnostic Capabilities** | | |
| CT or MRI performance w/in 25 minutes of order 24 hours a day, seven days a week |  |  |
| CT or MRI completed and results reported to stroke team within 45 minutes of order 24 hours a day, seven days a week |  |  |
| ECG and Chest X-ray |  |  |
| **Therapies** | | |
| IV thrombolytic therapy 24 hours a day, seven days a week |  |  |
| **Infrastructure** | | |
| Stroke Coordinator |  | List of stroke coordinator responsibilities |
| Written stroke protocols/order sets/procedures/algorithms for assessment and treatment of ischemic and hemorrhagic strokes, which include: -stroke team activation process (from prehospital notification and for “walk-ins”) -initial diagnostic tests (e.g., FAST screen at triage, NIH stroke scale, CT)  -telestroke protocol/procedures, if applicable  -administration of medications (e.g., t-PA) -swallowing assessment prior to oral intake  Transfer protocols or guidelines that include criteria specific to transferring stroke patients, including hemorrhagic stroke, stroke patients outside the IV t-PA treatment window, etc.General EMTALA transfer protocols or guidelines that don’t specifically address stroke transfers are not adequate documentation. |  | Stroke protocols/order sets, procedures/algorithms, etc.) for each action or process listed.  Name of telestroke partner hospital, if applicable.  Transfer Protocols per criterion. General EMTALA transfer protocols or guidelines that don’t specifically address stroke transfers are not adequate documentation. |
| Organizational/administration support |  |  |
| Laboratory or point of care testing 24 hours a day, seven days a week. |  |  |
| Data abstraction resources to collect and submit data to meet Performance Measurement and Quality Improvement Criteria, below. |  |  |
| Coordination with Emergency Medical Services |  | Description of how you work with EMS in your community, e.g., attendance at county and/or regional EMS council meetings, copies of county EMS stroke patient care procedures, joint training, etc. |
| Transfer protocols or guidelines that include criteria specific to transferring stroke patients, including hemorrhagic stroke, stroke patients outside the IV t-PA treatment window, etc.General EMTALA transfer protocols or guidelines that don’t specifically address stroke transfers are not adequate documentation. |  |  |
| **Training and Education** | | |
| Minimum of 4 hours stroke related education (preferably CME/CNE) for emergency department personnel involved in stroke diagnosis and treatment to ensure competence. |  | Description of education provided or attended. |
| Public education on education at least once per year on stroke-related topics such as prevention, risk factors, signs and symptoms, and the importance of getting treatment right away and calling 911.. Education could be provided through hospital newsletters, pamphlets, videos in the hospital or other places, public service announcements, newspaper articles, billboards, etc. See Appendix C for resources and the [Stroke Education Toolkit](http://www.doh.wa.gov/Portals/1/Documents/Pubs/346056.pdf) on the [ECS System](http://www.doh.wa.gov/ecs) website. |  | Example from previous year |
| Patient education |  | Copy of stroke patient education |
| **Performance Measurement and Quality Improvement** | | |
| Internal Stroke Care Quality Improvement |  | Provide a description of your stroke QI activities. This should include:   * The type and source of data used to guide the process (e.g., internal or external patient data registries). * Participants in the internal QI process (preferably a multi-disciplinary group). * The process, e.g., monthly meetings with case reviews, data presentations, PDSA’s, root cause analysis, etc. * An example of a stroke case reviewed during the previous categorization period.  Please include a summary of the case, the issue identified, discussion and conclusion, action plan developed to address deficiencies or improve processes, evaluation of the action plan and issue resolution (loop closure).  The example may be a system issue, a physician or nursing practice issue or an unfavorable patient outcome.  Please mark as confidential, and remove all patient and practitioner identifiers. |
| Participation in regional quality improvement activities. The ECS law amended RCW 70.168.090(2) to allow existing regional EMS and trauma quality assurance (QA) programs to evaluate cardiac and stroke care delivery in addition to trauma care delivery. |  | Description of participation in regional QI activities. |
| Participation in a national, state, or local data collection system that measures stroke system performance from patient onset of symptoms to transfer or discharge, and includes, at a minimum,  the following key patient care measures, plus the nationally recognized consensus measures for stroke *for patients who are admitted and not transferred to a Level I or II facility.*   1. **Mode of Arrival:** Percent of patients who arrive by EMS. 2. **Pre-notification:** Percent of cases of advanced notification by EMS for patients transported by EMS from scene. 3. **% Door To CT <= 25min:** Percent of patients who receive brain imaging within 25 minutes of arrival. 4. **% CT Interpretation <= 45 Min:** Percent of patients whose brain imaging results were interpreted within 45 minutes of arrival. 5. **Time to Intravenous Thrombolytic Therapy - 60 min:** Percent of acute ischemic stroke patients receiving intravenous tissue plasminogen activator (tPA) therapy during the hospital stay who have a time from hospital arrival to initiation of thrombolytic therapy administration (door-to-needle time) of 60 minutes or less. 6. **Patients treated with IV rt-PA:** Percent of eligible acute ischemic stroke patients who were treated with IV rt-PA at my hospital. 7. **Door-in/Door-out time:** Time from hospital arrival to hospital departure for stroke patients transferred from my hospital to another hospital.   For patients admitted and not transferred for treatment or post-treatment care, the National Stroke Inpatient Quality Measures:   * Venous thromboembolism (VTE) prophylaxis * Discharged on antithrombotic therapy * Anticoagulation therapy for atrial fibrillation/flutter * Thrombolytic therapy * Antithrombotic therapy by end of hospital day 2 * Discharged on statin medication * Stroke education * Assessed for rehabilitation |  | Documentation or description of data collection system used to evaluate performance on the listed key patient care measures. |
| Evaluation of performance on treating stroke according to [current guidelines](https://www.ahajournals.org/doi/10.1161/STR.0000000000000211).  [Brain Attack Coalition Guidelines](http://www.stroke-site.org/guidelines/tpa_guidelines.html)  [2009 Science Advisory expanding the window for treatment from 3 to 4.5 hours](http://stroke.ahajournals.org/cgi/reprint/40/8/2945?ijkey=a3a0a01606488a9bbd6ed01c1618cb1a39ed7a2b) |  | Documentation or description of how you evaluate adherence to stroke guidelines. |

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***D. Documentation Checklist***

Please arrange the documentation in the order specified and place a tabbed, labeled, divider between each.

List of stroke coordinator responsibilities.

Stroke protocols/order sets, procedures/algorithms, etc.) for each action or process listed:

- Stroke team activation process (from prehospital notification and for “walk-ins”)  
- Initial diagnostic tests (e.g., FAST screen at triage, NIH stroke scale, CT)

- Telestroke protocol/procedures, if applicable

- Administration of medications (e.g., t-PA

- Swallowing assessment prior to oral intake

- Name of telestroke partner hospital, if applicable.

Transfer Protocols per criterion. General EMTALA transfer protocols or guidelines that don’t specifically address stroke transfers are not adequate documentation.

Description of stroke unit, including staffing, training, operation, admission/discharge, care protocols, census, and outcome data.

Description of how you work with EMS in your community, e.g., attendance at county and/or regional EMS council meetings, copies of county EMS stroke patient care procedures, joint training, etc. and list of coordination activities from the last year.

Example of public education materials/messaging on stroke from previous year.

Example of stroke patient education

Provide a description of your stroke QI activities. This should include:

* The type and source of data used to guide the process (e.g., internal or external patient data registries).
* Participants in the internal QI process (preferably a multi-disciplinary group).
* The process, e.g., monthly meetings with case reviews, data presentations, PDSA’s, root cause analysis, etc.
* An example of a stroke case reviewed during the previous categorization period.  Please include a summary of the case, the issue identified, discussion and conclusion, action plan developed to address deficiencies or improve processes, evaluation of the action plan and issue resolution (loop closure).  The example may be a system issue, a physician or nursing practice issue or an unfavorable patient outcome.  Please mark as confidential, and remove all patient and practitioner identifiers.

Description of participation in regional QI activities.

Documentation or description of data collection system used to evaluate performance on these key patient care measures:

1. **Mode of Arrival:** Percent of patients who arrive by EMS.
2. **Pre-notification:** Percent of cases of advanced notification by EMS for patients transported by EMS from scene.
3. **% Door To CT <= 25min:** Percent of patients who receive brain imaging within 25 minutes of arrival.
4. **% CT Interpretation <= 45 Min:** Percent of patients whose brain imaging results were interpreted within 45 minutes of arrival.
5. **Time to Intravenous Thrombolytic Therapy - 60 min:** Percent of acute ischemic stroke patients receiving intravenous tissue plasminogen activator (tPA) therapy during the hospital stay who have a time from hospital arrival to initiation of thrombolytic therapy administration (door-to-needle time) of 60 minutes or less.
6. **Patients treated with IV rt-PA:** Percent of eligible acute ischemic stroke patients who were treated with IV rt-PA at my hospital.
7. **Door-in/Door-out time:** Time from hospital arrival to hospital departure for stroke patients transferred from my hospital to another hospital.

For patients admitted and not transferred for treatment or post-treatment care, the National Stroke Inpatient Quality Measures:

* Venous thromboembolism (VTE) prophylaxis
* Discharged on antithrombotic therapy
* Anticoagulation therapy for atrial fibrillation/flutter
* Thrombolytic therapy
* Antithrombotic therapy by end of hospital day 2
* Discharged on statin medication
* Stroke education
* Assessed for rehabilitation

Documentation or description of how you evaluate adherence to stroke guidelines.

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| --- |
|  |

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**IV. Appendices**

**APPENDIX A**

1. [State of Washington Prehospital Stroke Triage Destination Procedure](http://www.doh.wa.gov/Portals/1/Documents/Pubs/346049.pdf)
2. Resources

**Appendix B. Resources**

**APPENDIX B**

**Stroke Systems of Care**

[Washington State Emergency Cardiac and Stroke System](http://www.doh.wa.gov/ecs)

[Recommendations for the Establishment of Stroke Systems of Care](http://stroke.ahajournals.org/cgi/reprint/36/3/690)

[Implementation Strategies for Emergency Medical Services Within Stroke Systems of Care](http://stroke.ahajournals.org/cgi/reprint/38/11/3097?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=Implementation+strategies&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT&eaf)

[A Policy Statement From the American Heart Association/American Stroke Association Expert Panel on Emergency Medical Services Systems and the Stroke Council](http://stroke.ahajournals.org/cgi/reprint/38/11/3097?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=Implementation+strategies&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT&eaf)

**Stroke Treatment Guidelines**

[Guidelines for the Early Management of Acute Ischemic Stroke](http://stroke.ahajournals.org/content/early/2013/01/31/STR.0b013e318284056a.full)

[2009 Science Advisory expanding the window for treatment from 3 to 4.5 hours](http://stroke.ahajournals.org/cgi/reprint/40/8/2945?ijkey=a3a0a01606488a9bbd6ed01c1618cb1a39ed7a2b)

[National Guidelines Clearinghouse](http://www.guideline.gov/)

[Brain Attack Coalition Guidelines](http://www.stroke-site.org/guidelines/tpa_guidelines.html)

**Multifocus Stroke Websites**

(Assessment, Treatment, Sample Protocols and Orders, Training, Conferences, Public Education, Prevention, etc.)

[Target: Stroke](http://www.strokeassociation.org/STROKEORG/Professionals/Target-Stroke_UCM_314495_SubHomePage.jsp)

[Brain Attack Coalition](http://www.stroke-site.org/)

[American Stroke Association](http://www.strokeassociation.org/STROKEORG/Professionals/TargetStroke_UCM_314495_SubHomePage.jsp)

[National Institute for Neurological Disorders and Stroke](http://www.ninds.nih.gov/)

[NIH Stroke Scale - Training DVD](http://stroke.nih.gov/)

[Washington State Heart Disease and Stroke Prevention Program](https://www.doh.wa.gov/AboutUs/ProgramsandServices/PreventionandCommunityHealth/OfficeofHealthyandSafeCommunities/CommunityBasedPrevention/HeartDiseaseStrokeandDiabetesPreventionUnit)

**Public Education**

[Stroke Education Toolkit](http://www.doh.wa.gov/Portals/1/Documents/Pubs/346056.pdf)

Reducing Delay in Seeking Treatment by Patients With Acute Coronary Syndrome and Stroke

1. Acute coronary syndrome includes ST elevation myocardial infarction (STEMI), non-STEMI, and unstable angina. [↑](#footnote-ref-1)