

Mission Lifeline Stroke: Prehospital Care Measures & the Patient Management Tool



A Call to Action

Dr. Ed Jauch, MD, MS FAHA

Presenter Disclosure Information:

(Add Disclosures if any)

Objectives:

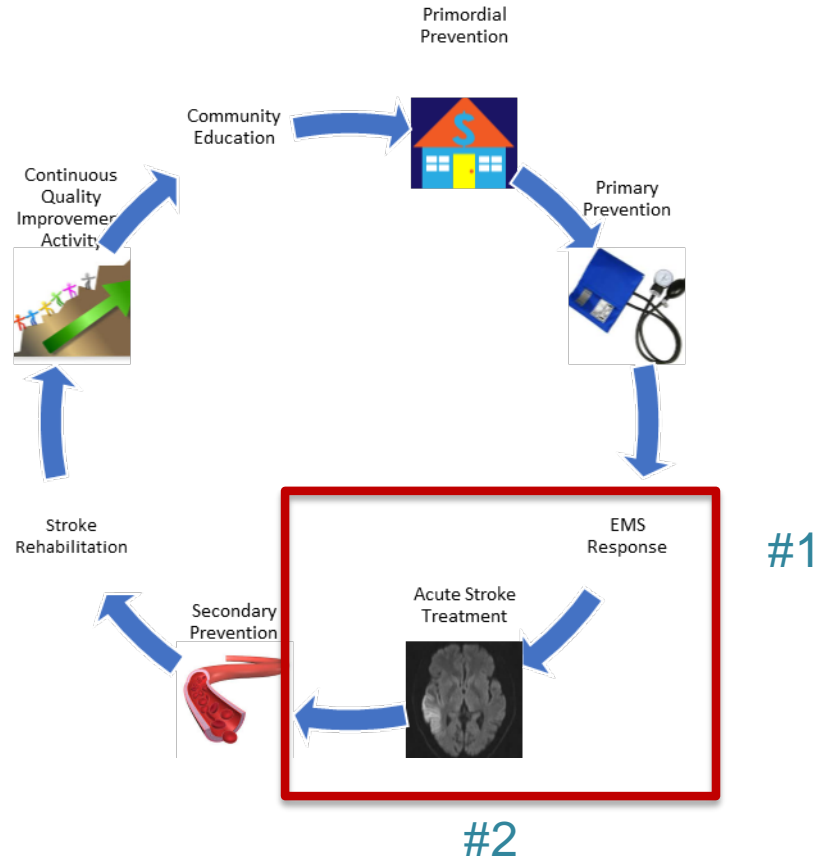
By the end of the presentation, you will be able to:

- Understand the rationale behind the Prehospital Care metrics
- Recognize which data elements are being used for the Prehospital Care measure(s)
- Encourage use of EMS Special Initiatives Tab on Patient Management Tool (PMT)

But First.....

Thank you

Background:



Background:

Recommendations for Emergency Medical Services (EMS) Assessment and Management:

1. 9-1-1 dispatchers should make stroke a priority dispatch, and transport times should be minimized (*Class I; Level of Evidence B-NR*)
2. The use of a stroke assessment system by first aid providers, including EMS dispatch personnel, is recommended (*Class I; Level of Evidence B-NR*)
3. EMS personnel should begin the initial management of stroke in the field. Implementation of a stroke protocol to be used by EMS personnel is strongly encouraged (*Class I; Level of Evidence B-NR*)
4. EMS personnel should provide prehospital notification to the receiving hospital that a suspected stroke patient is en route so that the appropriate hospital resources may be mobilized before patient arrival (*Class I; Level of Evidence B-NR*)

Background Continued:

Recommendations for EMS Systems:

5. Regional systems of stroke care should be developed and consist of the following:
 - (a) Healthcare facilities that provide initial emergency care, including administration of IV alteplase
 - (b) Centers capable of performing endovascular stroke treatment with comprehensive periprocedural care to which rapid transport can be arranged when appropriate (*Class I; Level of Evidence A*)

6. Patients with a positive stroke screen and/or a strong suspicion of stroke should be transported rapidly to the closest healthcare facilities that can capably administer IV alteplase (*Class I; Level of Evidence B-NR*)

Background Continued:

Recommendations for Hospital Stroke Capabilities:

7. It is recommended that DTN time goals be established. A primary goal of achieving DTN times within 60 minutes in $\geq 50\%$ of AIS patients treated with IV alteplase should be established. (*Class I; Level of Evidence B-NR*)

Prehospital Care Measures:

1. Identification of Suspected Strokes

Percentage of confirmed stroke patients transported to your hospital by EMS and identified as suspected strokes.

Why is the measure needed?

- Low accuracy of stroke identification by EMS providers

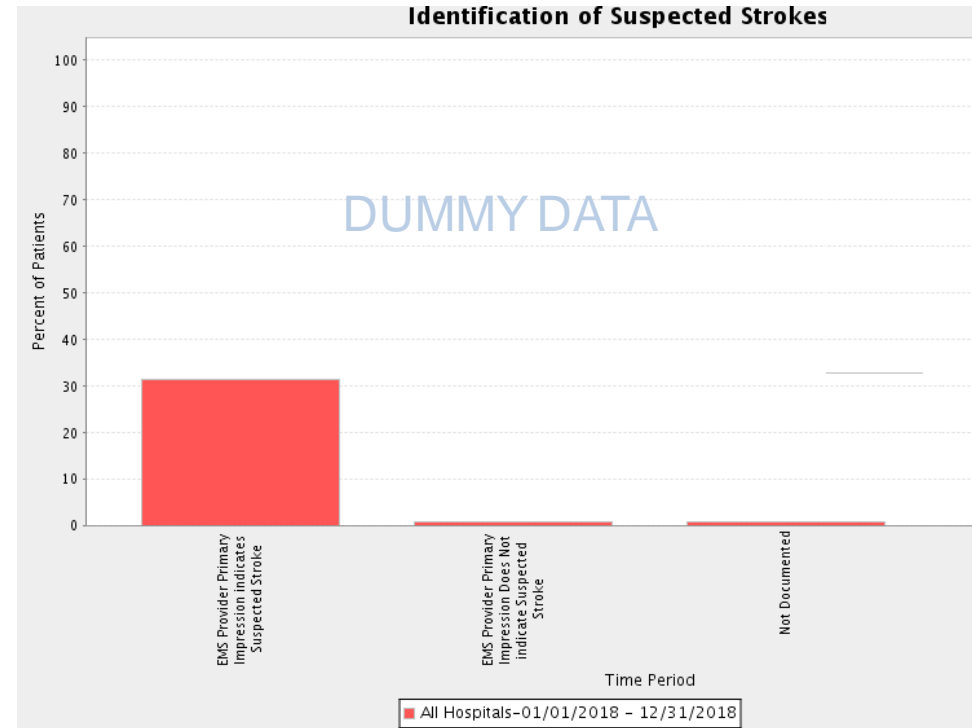


Figure: Categorical graph – Histogram of the EMS Primary Impression of Stroke.

2. Documentation of Time LKW or SxD

Percentage of confirmed stroke patients transported to your hospital by EMS and for whom a time “Last Known Well” (LKW) or “Time of Discovery” of Stroke Symptoms was documented.

Why is the measure needed?

- Two terms are often inappropriately used interchangeably.
 - “Time of Last Known Well” refers to the time that the patient or a witness can confirm the patient was at their baseline
 - “Time of Symptom Discovery” refers to the time at which the symptoms were first noticed

3. Evaluation of Blood Glucose

Percentage of confirmed stroke patients transported to your hospital by EMS and for whom blood glucose was evaluated by EMS.

Why is the measure needed?

- Hypoglycemia symptoms often mimic stroke

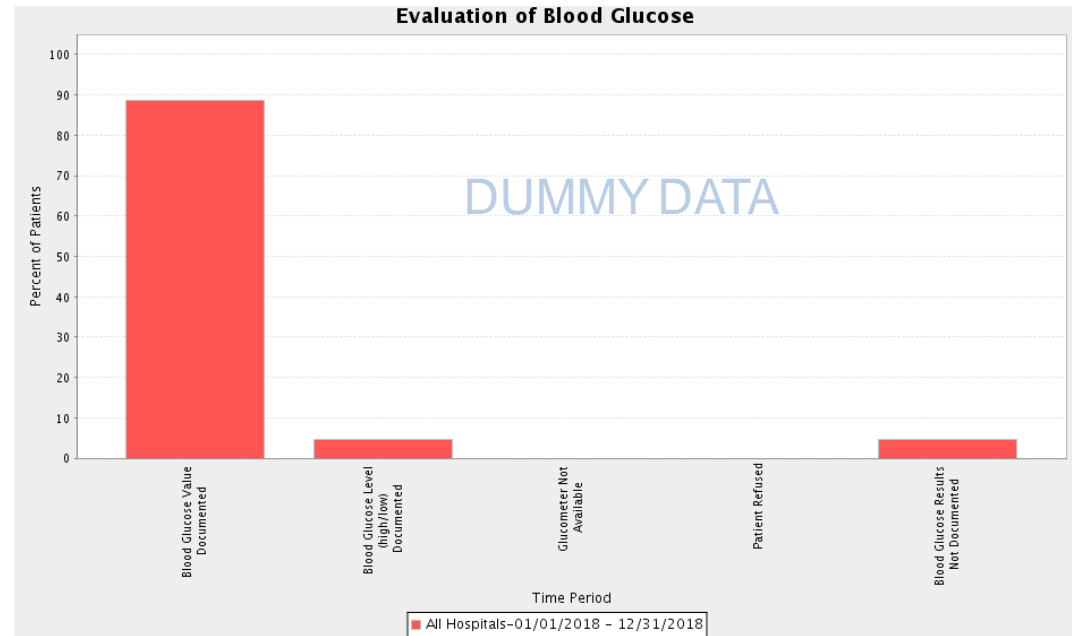


Figure: Categorical graph displays the frequency of the response options that could be selected for Evaluation of Blood Glucose by EMS.

4. Stroke Screen Performed and Reported

Percentage of confirmed stroke patients transported to your hospital by EMS and for whom a validated regional or national stroke screen tool was used with documentation of the outcome.

Why is the measure needed?

- Improve accuracy of triage of suspected stroke patients

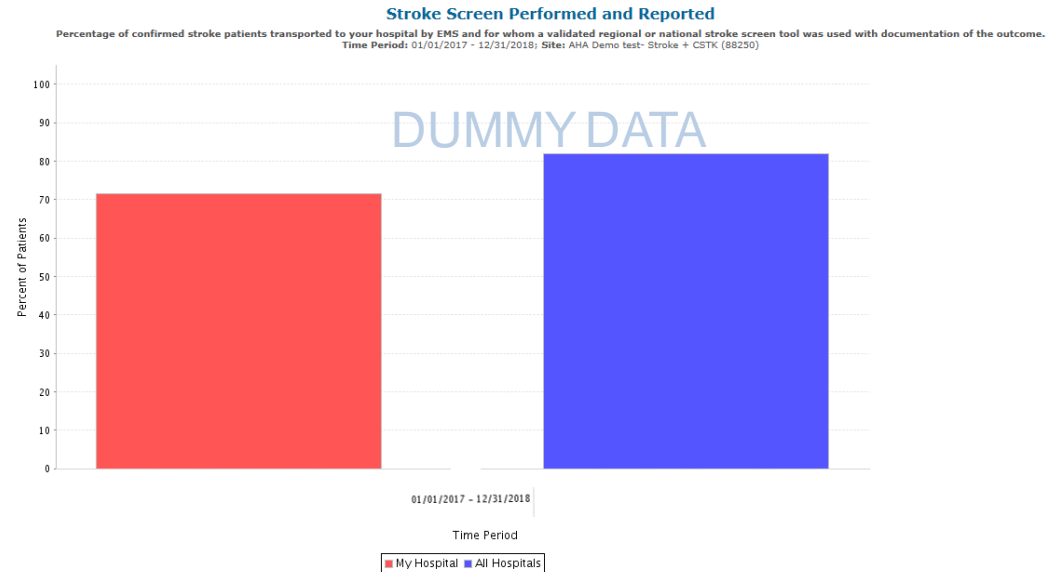


Figure: Rate-based measure. Graph displays the comparison of the overall rate (screen completed and score (positive or negative) reported at your hospital to all hospitals for the selected time period.

5. Stroke Severity Screen Performed and Reported

Percentage of confirmed stroke patients transported to your hospital by EMS and for whom a validated regional or national severity screen tool was used with documentation of the outcome.

Why is the measure needed?

- Effectively triage patients to most appropriate level of care
 - Patients with large vessel occlusion

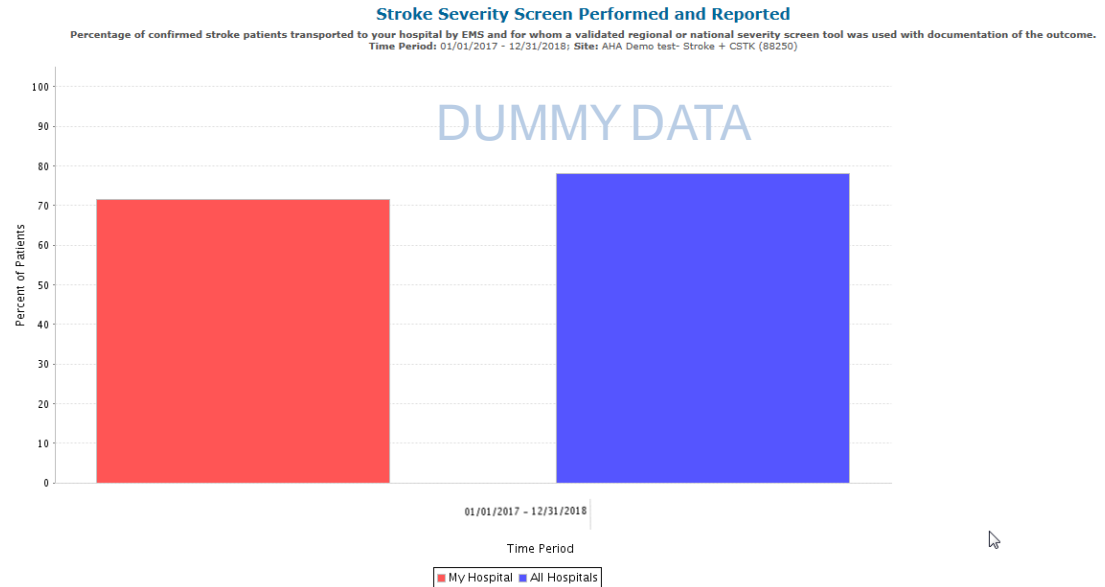


Figure: Rate-based measure. Graph displays the comparison of the overall rate (severity screen completed and score (numerical value) reported at your hospital to all hospitals for the selected time period.

6. Use of Thrombolytic Checklist [Coverdell Only]

Percentage of confirmed stroke patients transported to your hospital by EMS and for whom a thrombolytic check was completed.

Why is the measure needed?

- Ensure consistent assessment of all patients

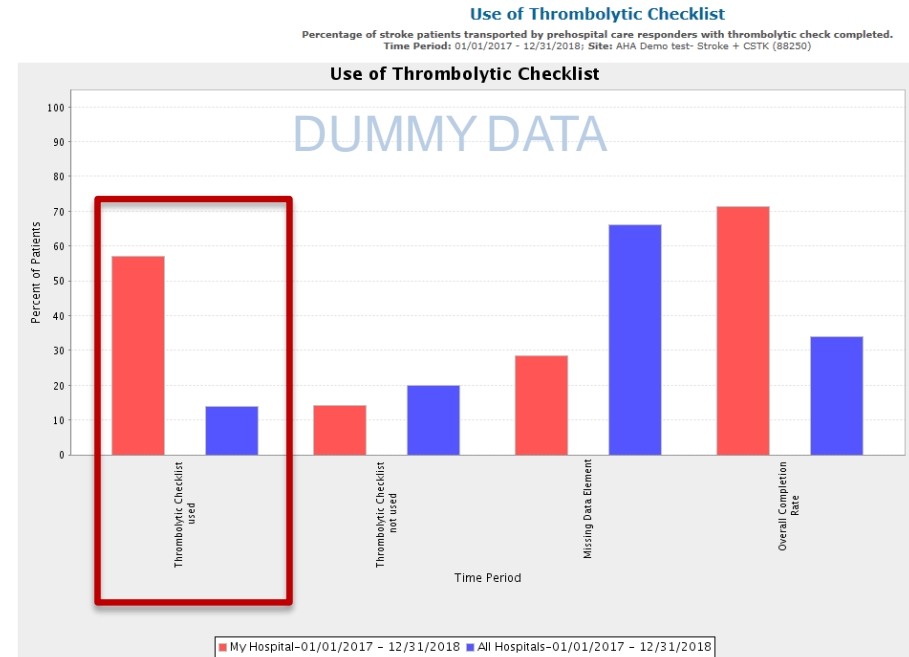


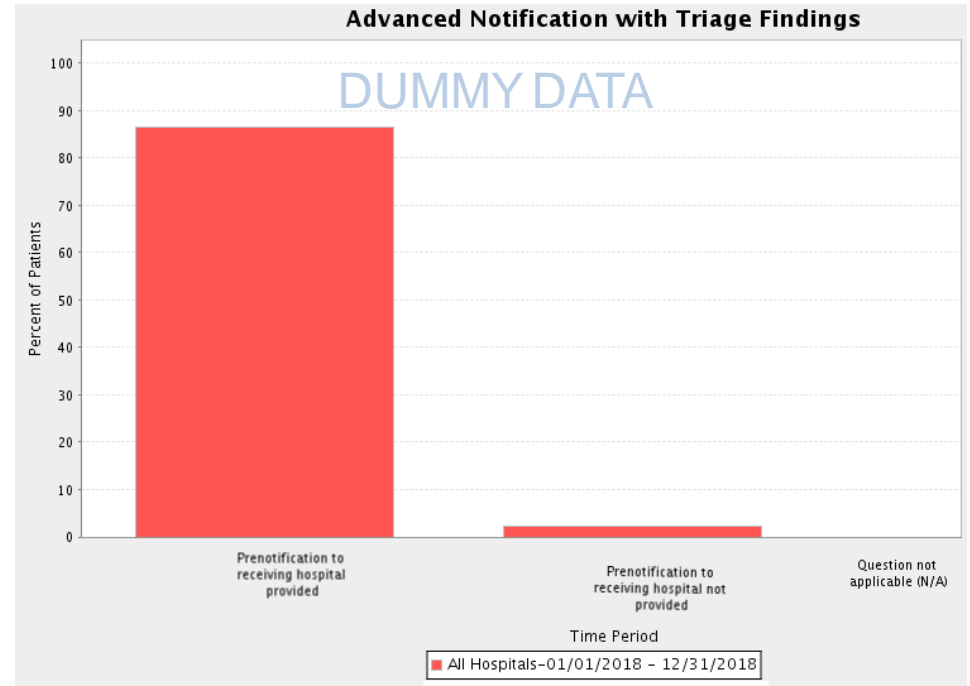
Figure: Graph displays the frequency of the different response options (Yes; No/ND) as well as when the question was left blank.

7. Advanced Notification with Triage Findings

Percentage of stroke transports where EMS called in a stroke alert prenotification to the receiving hospital and provided additional information about patient's status (e.g., most recent BP reading, time LKW, etc.).

Why is the measure needed?

- Allows hospital resources to be mobilized prior to patient arrival
- Improve rate of prenotification (currently only 67%)

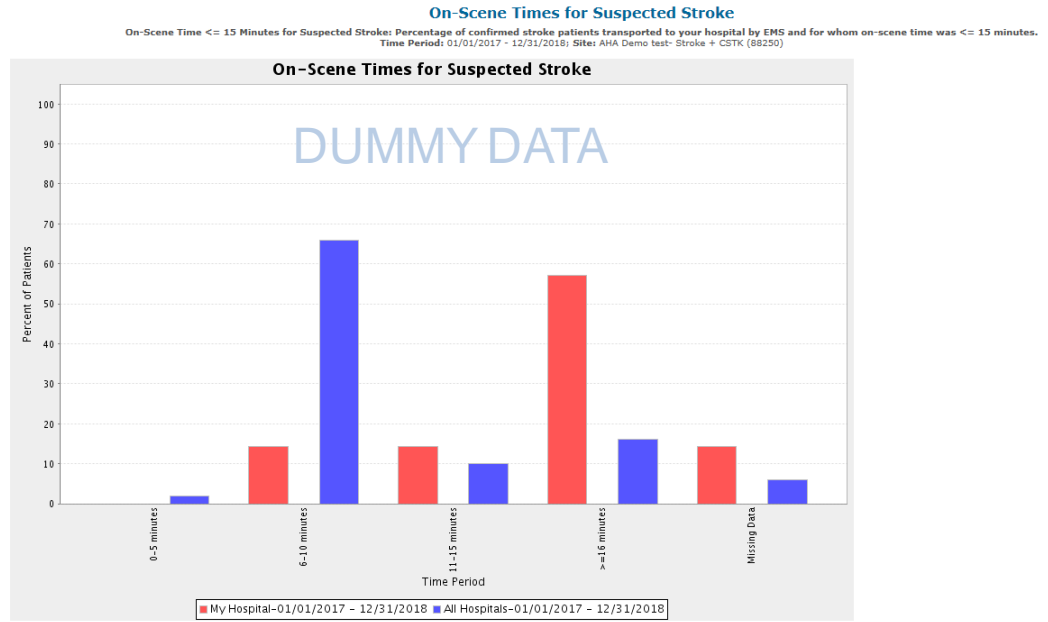


8. On-Scene Times for Suspected Stroke

Distribution of times for suspected stroke patients transported to your hospital by EMS. Based on AHA Guidelines, the goal for EMS on-scene time is ≤ 15 minutes.

Why is the measure needed?

- Identify the intervals contributing to delays



On-Scene Times for Suspected Stroke											
Benchmark Group	Time Period	0-5 minutes	6-10 minutes	11-15 minutes	≥ 16 minutes	Missing Data	Total	Mean	Standard Deviation	Median	Range

Figure: Histogram displays the distribution of times, but the table includes the mean and median times.

9. DIDO at 1st Hospital Prior to Transfer

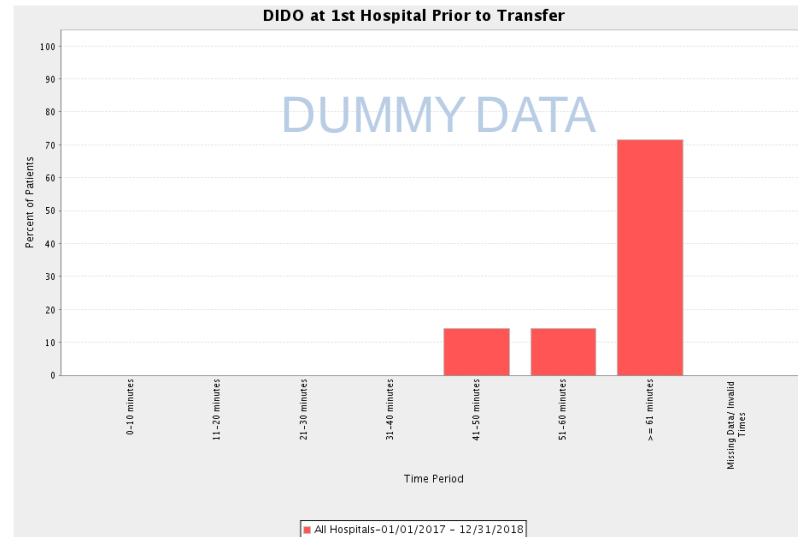
Distribution of times for confirmed stroke patients transported to your hospital by EMS and were transferred to a higher-level stroke center (e.g. PSC, CSC, etc.) for time-critical therapy.
Based on AHA Guidelines, the goal for DIDO is ≤ 60 minutes.

Why is the measure needed?

- Rapid transport to higher-level stroke center for time-critical care (e.g., surgical, neurocritical)

DIDO at 1st Hospital Prior to Transfer

Door-in-Door-Out Time ≤ 60 Minutes at First Hospital Prior to Transfer for Acute Therapy; Percentage of confirmed stroke patients transported to your hospital by EMS and for whom ≤ 60 minutes was spent in the ED prior to transfer to a higher-level stroke center (e.g. PSC, CSC, etc.) for time-critical therapy.
 Time Period: 01/01/2017 - 12/31/2018; Site: AHA Demo test- Stroke + CSTK (88250)



Benchmark Group	Time Period	0-10 minutes	11-20 minutes	21-30 minutes	31-40 minutes	41-50 minutes	51-60 minutes	>= 61 minutes	Missing Data/Invalid Times	Total	Mean	Standard Deviation	Median	Range

Figure: Histogram displays the distribution of times for door-in-door out at 1st hospital, but the table includes the mean and median times.

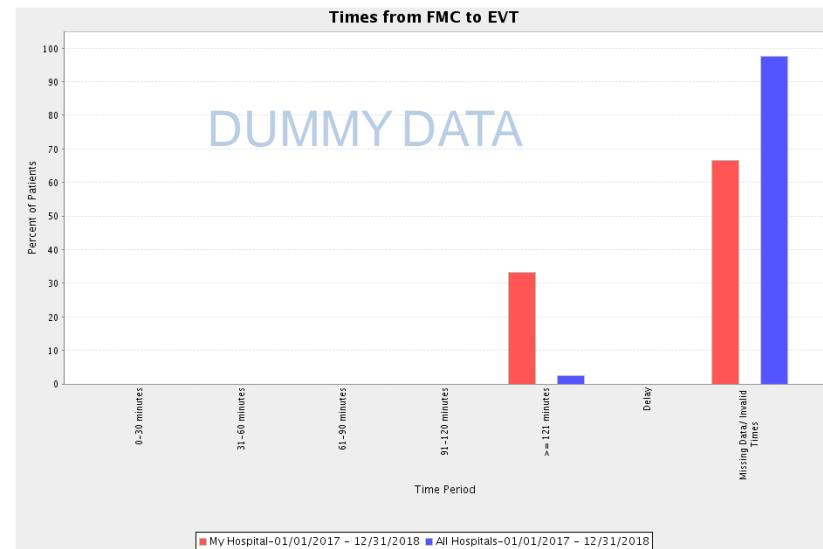
10. Times from FMC to EVT

Distribution of time for confirmed stroke patients transported to your hospital by EMS and the time from first medical contact (FMC) to time of first pass (i.e. deployment) of device for endovascular thrombectomy (EVT). **Based on AHA Guidelines, the goal for time from FMC to EVT is ≤ 60 minutes.**

Why is the measure needed?

- Reduce system time to treatment

Times from FMC to EVT
 Time from First Medical Contact to Thrombectomy for Acute Ischemic Stroke: Percentage of confirmed stroke patients transported to your hospital by EMS and for whom ≤ 60 minutes was spent from time of first medical contact to time of first pass (i.e. deployment) of device for endovascular thrombectomy.
 Time Period: 01/01/2017 - 12/31/2018; Site: AHA Demo test-Stroke + US IK (8820U)



Times from FMC to EVT													
Benchmark Group	Time Period	0-30 minutes	31-60 minutes	61-90 minutes	91-120 minutes	>= 121 minutes	Delay	Missing Data/Invalid Times	Total	Mean	Standard Deviation	Median	Range

Figure: Histogram displays the distribution of times from first medical contact at patient to endovascular treatment, but the table displays the median time.

Target Stroke Phase III

Reaching goals for Target Stroke Phase III would require cooperation and collaboration throughout the entire Stroke System of Care

QI initiatives focusing on both pre-hospital and In-hospital measures are essential for success

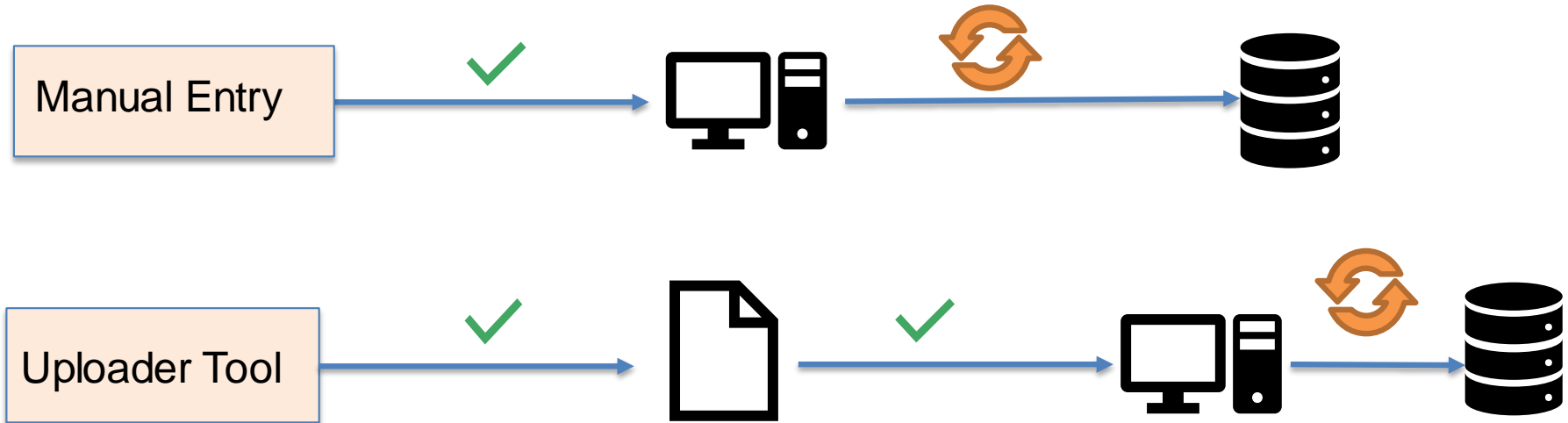
Target Stroke Phase III Webinar
recording now available:

<https://www.heart.org/en/professional/quality-improvement/get-with-the-guidelines/get-with-the-guidelines-stroke/get-with-the-guidelines-stroke-and-target-stroke-workshops-and-webinars>

PMT: Special Initiatives Tab

Data Flow:

- How data is populated in the Patient Management Tool?



National Experience

Nationwide frustration was noticed

Initial uptake of users

Over 900 facilities activated the EMS Tab

Due to frustrations and issues many have stopped utilizing tool

Results: Missing and incomplete data



Call to Action

Major issue(s) have been resolved

Encourage users who have activated the tab to start entering data again

Goals:

1. Have complete data set of EMS Measures
2. Analyze data measures and create baselines for each measure
3. Set award levels and recognize high performers
4. Identify best practices and share with all users

Mission: Lifeline Stroke Best Practices

1. High performers have highly engaged EMS
 - EMS Important contributing members of stroke teams
 - Regularly collaborate with EMS to determine how to improve the Stroke System of Care
2. Improved documentation
 - Establish uniform documentation of key elements “A place for everything and everything in its place”
 - Abstractors have timely access to EMS ePCRs transported to their facilities.

Mission: Lifeline Stroke

Best Practices

1. Feedback loop

- Regularly provide feedback provided to EMS- Include commendation and challenges
- Regularly provide feedback to Stroke Centers- Include commendation and challenges
- Feedback must be done in a timely manner- while patient is still fresh on everyone's mind

2. Education and QA/QI

- Understand what and why documenting certain measures
- QA/QI process established for entire SSOC, focus on finding team solutions to challenges

Hot off the press:

On Monday, May 20th the American Stroke Association released a new policy statement with recommendations for stroke systems of care to improve patient outcomes –

Recommendations for the Establishment of Stroke Systems of Care: A 2019 Update: A Policy Statement From the American Stroke Association

<https://www.ahajournals.org/doi/10.1161/STR.0000000000000173>

Statement Highlights:

- To translate advances in scientific knowledge and innovations in stroke care into improvements in patient outcomes, comprehensive stroke systems of care must be in place to facilitate optimal stroke care delivery.
- New recommendations support policies that standardize the delivery of stroke care, lower barriers to emergency care for stroke, ensure stroke patients receive care at appropriate hospitals in a timely manner and improve access to secondary prevention and rehabilitation and recovery resources after stroke.
- The policy statement recommends that Emergency Medical Services (EMS) should consider additional travel time of up to 15 minutes to reach a hospital capable of administering intravenous alteplase and/or performing endovascular thrombectomy for patients suspected of having a severe stroke.

Coming Soon:

2019 Update to ML:S Routing Algorithm

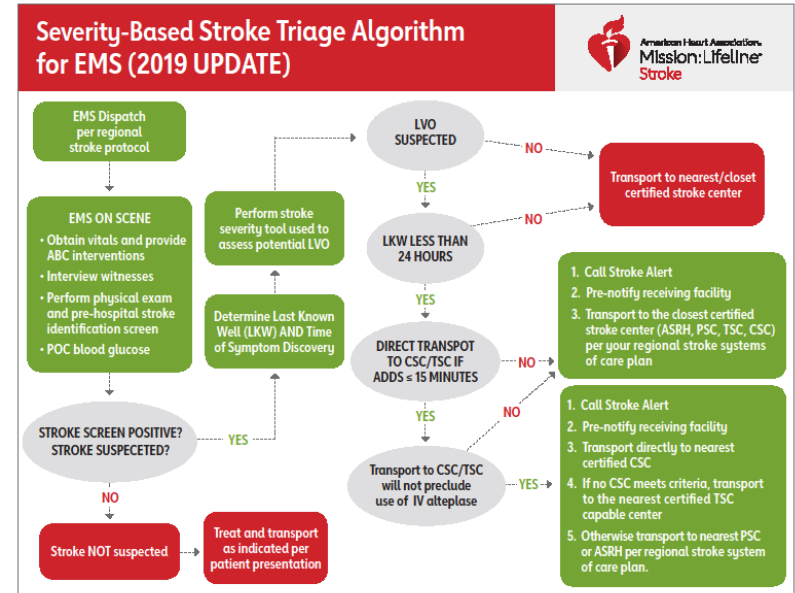
Key changes-

Expansion of inclusion window

Clarifies routing between TSC and CSC

Improved look and flow of algorithm

In final phase of approval



Draft Copy- Not for Distribution

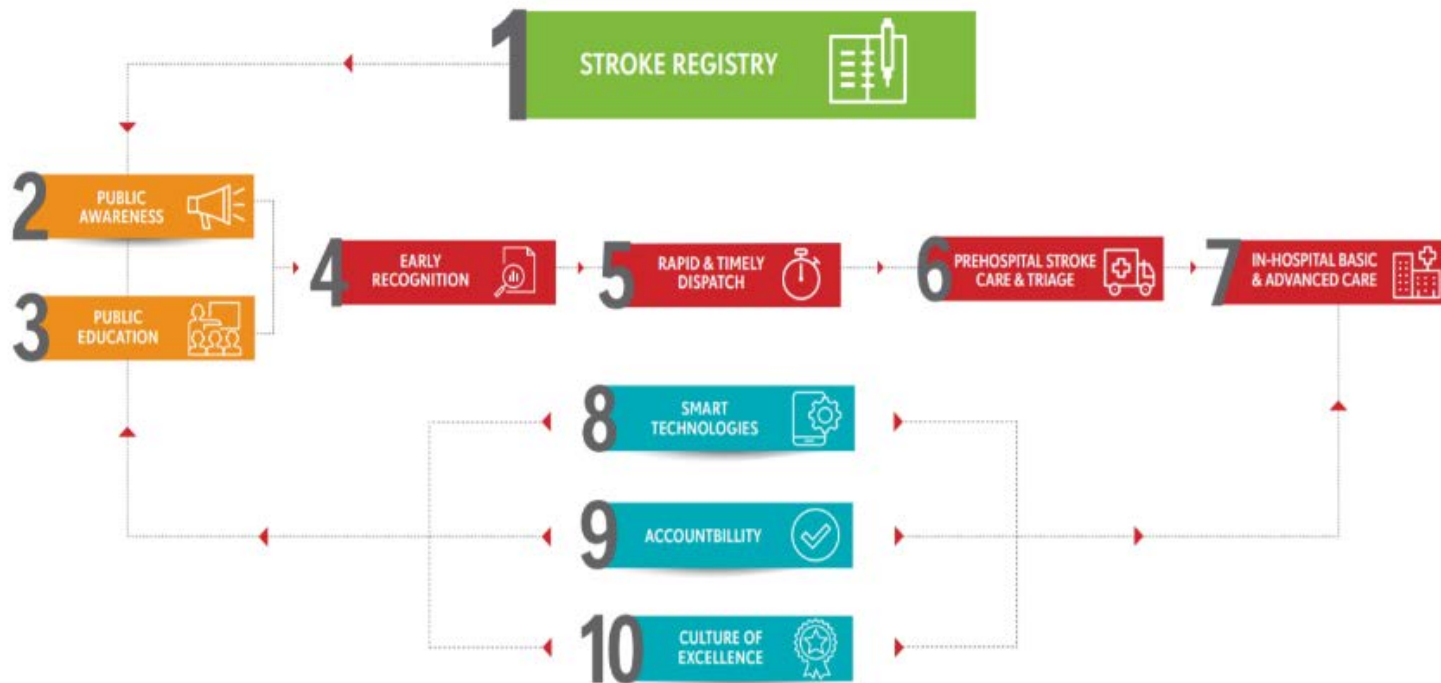
Coming Soon:

Utstein Stroke Paper

- International expertise
- Various specialties
- Science, education and implementation



10 STEPS TO IMPROVE STROKE SURVIVAL



BYSTANDER



Community awareness
and call for emergency
help

DISPATCHER



Early recognition
and rapid dispatch

AMBULANCE



Early transport
and prehospital care

HOSPITAL



Early revascularization
and advanced care

REHABILITATION



Early rehabilitation
and follow up

Special Thank You

Dr. Peter Panagos

for his insight in the creation of this presentation

Summary:

- Ensure that all patients with a known or suspected stroke are rapidly identified by EMS providers and assessed using a validated and standardized instrument for stroke screening
- Reduce on-scene time in transported patients and route suspected stroke patients to the appropriate level of care
- Improve prenotification of suspected stroke patient to the receiving hospital
- Updates reflected in the PMT aim to harmonize NEMSIS[®] and GWTG[®] data elements
- Invite entire stroke team and EMS to register for upcoming webinar
- Call to Action: Enter EMS Measures into Special Initiatives Tab

Questions

