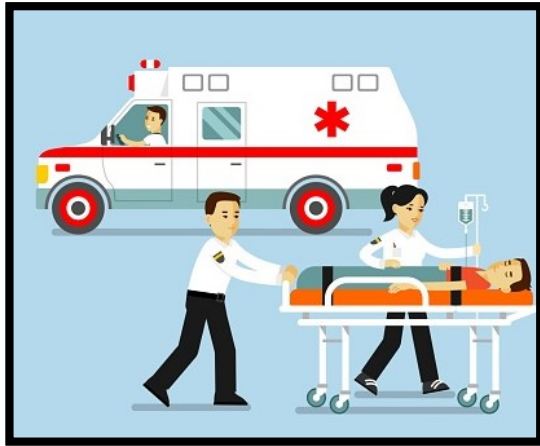


Stroke Quality: Measures, Metrics, Marks- Oh My!



Patricia Veinot, BSN, RN, SCRNI
Michelle Vallelunga, MS, RN CNRN, SCRNI
Data Coordinators

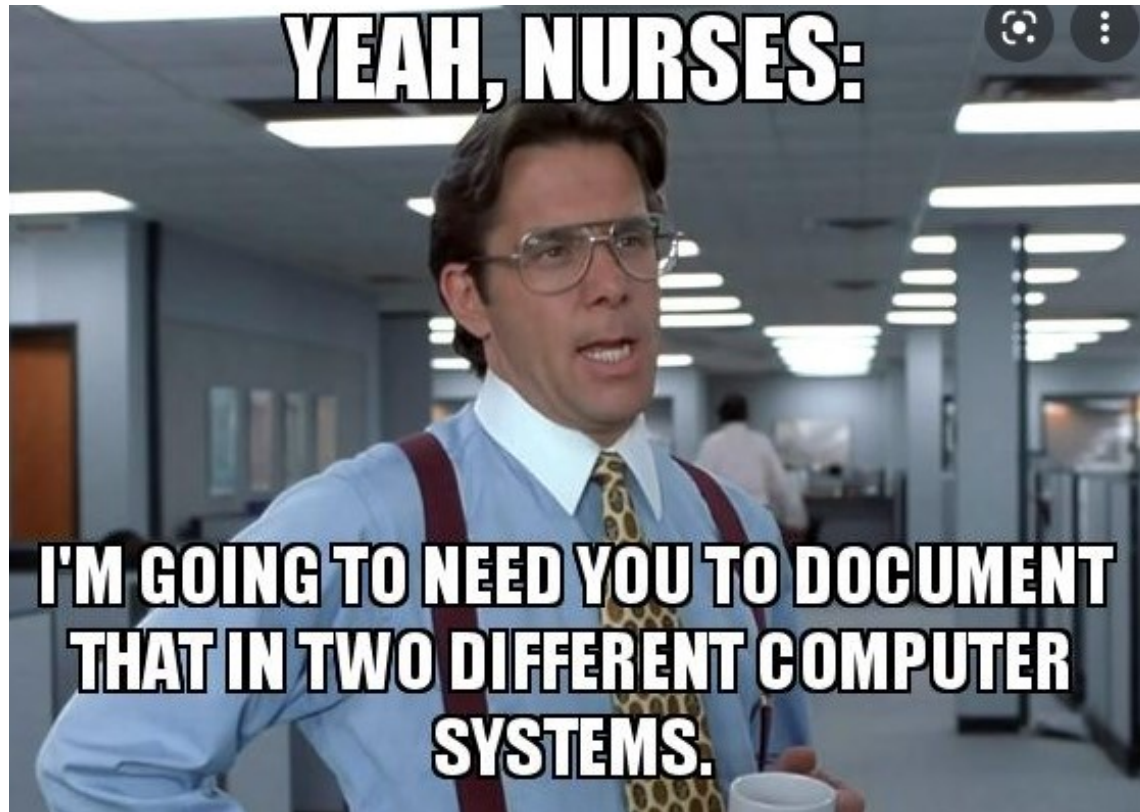


We have to do WHAT as a Primary/ Comprehensive Stroke Center?

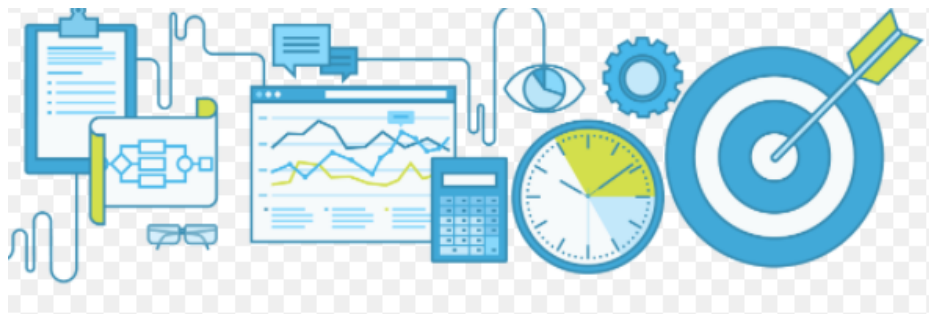


AHA, DNV,
JC, NYS DOH,
Target Stroke
@\$%&!!

Documentation: our source



Objectives

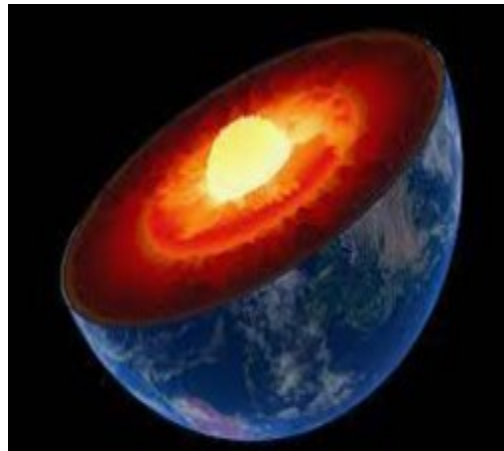


- ✓ Review the main stroke center quality measure requirements from 3 main groups
- ✓ Discuss data abstraction process as it relates to quality initiatives and importance of detailed feedback to enhance quality care
- ✓ Highlight ideas for preparing the data for meetings/surveys/other requests
- ✓ Tips for enhancing quality data and encouraging teamwork in your hospital through use of multiple communication modes

Organizing Measures: 1, 2, 3



TIME
Hyperacute
Response



Core
Measures
For Patient
Care and
Safety



Volumes



Time Measures: Hyperacute stroke treatment

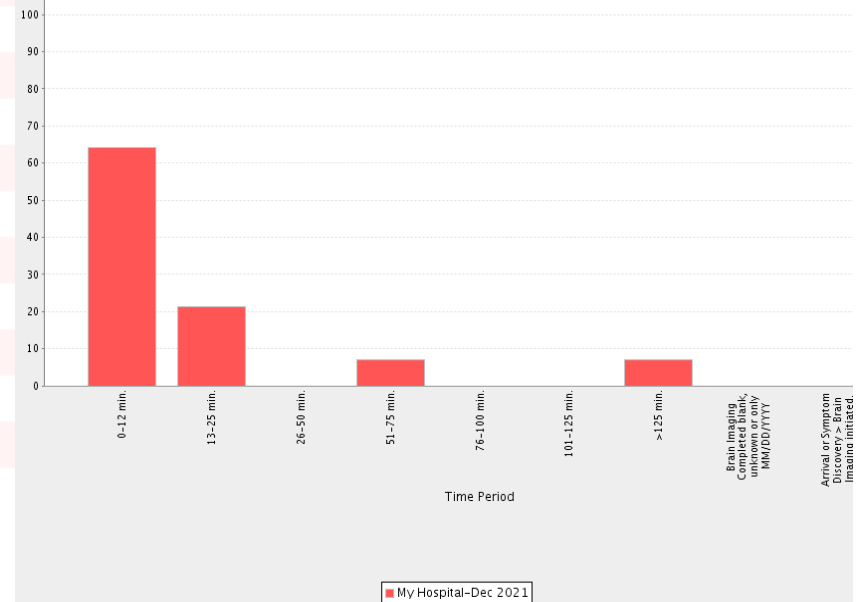
“Door To” Accreditors & NYS has specific definitions

EMS Pre-notification, EMS volumes, Telestroke, Transfers Out

res & Time Targets (GWTG) Strokes & TIAs w/ LKW
<- 6hrs EMS or car (GOAL 85%)

- Door to ED MD (%<10 min)
- Door to Stroke Team (%<15 min)
- Door to Brain Image Initiated (%<25min)
- Door to Brain Image Reported Read (%< 45 minutes)
- Door to IV Thrombolytic (<= 60 minutes)- 85%
- Door to IV Thrombolytic (<= 45 minutes)- 50%
- Door to/Order to Lab (%< 45 min)

Door To Brain Image Initiated



Pre Notification by EMS/all in by EMS (Strokes only) NYS

Prenotification by EMS(Strokes): Call has both LKW & CPSS

Prenotification by EMS & Stroke Code Prior to Arrival (Strokes only)

Door In Door Out/Times

TeleStroke Consults

Telestroke Transferred

Door To Brain Image Initiated

Note: Time periods/Categories at the end of the graph and data table have been omitted because there were no patient records during that time.

enchmark Group	Time Period	0-12 min.	13-25 min.	26-50 min.	51-75 min.	76-100 min.	101-125 min.	>125 min.	Brain Imaging Completed blank, unknown or only MM/DD/YYYY	Arrival or Sympt Discovery > Brain Imaging initiated	Median	Range
My Hospital	Dec 2021	9 (64.3%)	3 (21.4%)	0 (0%)	1 (7.1%)	0 (0%)	0 (0%)	1 (7.1%)	0 (0%)	0 (0%)	14	0 - 671

Include Median times

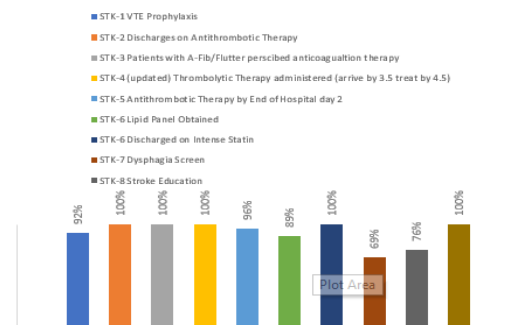


12 AHA Core Measures: 7 Achievement 5 Quality

Stroke Core Measures

STK-1 VTE Prophylaxis
STK-2 Discharges on Antithrombotic Therapy
STK-3 Patients with A-Fib/Flutter perscribed anticoagualtion therapy
STK-4 (updated) Thrombolytic Therapy administered (arrive by 3.5 treat by 4.5)
STK-5 Antithrombotic Therapy by End of Hospital day 2
STK-6 Lipid Panel Obtained
STK-6 Discharged on Intense Statin
STK-7 Dysphagia Screen
STK-8 Stroke Education
STK-10 Assessed Rehabilitation
Smoking Cessation (all stroke types w hx of smoking g
NYS NIHSS Reported

STROKE CORE MEASURES



TIME PERIOD

Interval: ☐ Aggregate

From: 2021 Oct

To: 2021 Dec

REPORT 1

GWTG Standard Measures:

GWTG Enhanced Version & Special Initiative Measures:

GWTG Additional Patient Population Measures:

Historic Measures:

Format:

Compare to:
(ctrl-click to select multiple)

Antithrombotics

****GWTG Target Stroke Set****

Achievement

Early Antithrombotics

VTE Prophylaxis

Antithrombotics

Anticoag for AFib/AFlutter

Intensive Statin Therapy

IV Thrombolytic Arrive by 3.5 Hour, Treat by 4.5 Hour

Smoking Cessation

Quality

Dysphagia Screen

Stroke Education

Rehabilitation Considered

Time to Intravenous Thrombolytic Therapy - 60 min

LDL Documented

NIHSS Reported

Reporting

Door-in-Door-Out Time at First Hospital Prior to Transfer for Acute Therapy

Distribution of Door-in-Door-Out Times at First Hospital Prior to Transfer for Acute Therapy

% No IV Alteplase 3 Hour

Percent of patients with an ischemic stroke or TIA perscribed antithrombotic therapy at discharge.

From AHA Inqvia platform https://heart.irp.iqvia.com/measure.html?study_id=1388&physician_id=328546&study_rev_id=882

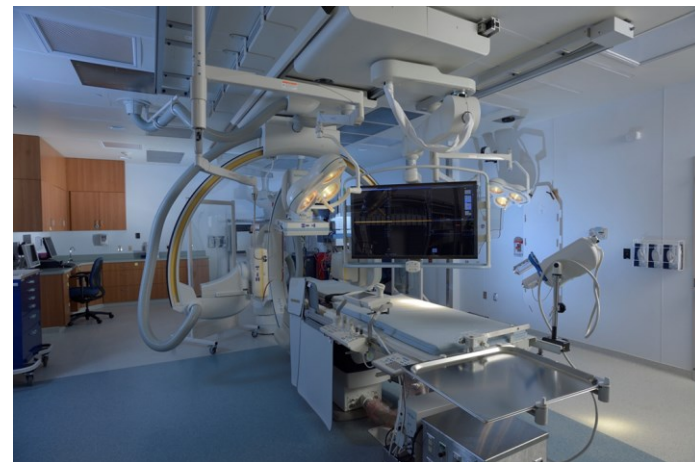


Volumes/"Run the numbers" KIM –Keep it meaningful

- ✓ **Patients by Arrival Method (EMS, Walk In)**
- ✓ **Number of Stroke Alerts/Codes**
- ✓ **Patients given Thrombolytics**
- ✓ **Patients Transferred and to where**
- ✓ **Patients by end diagnosis: Ischemic, TIA, etc**
- ✓ **Thrombectomies (if capable)**

Thrombectomy Capable or Comprehensive Metrics

- ✓ Time metrics for Thrombectomy Procedures
 - Door to Puncture, Door to First Pass, etc.
 - Reperfusion rates and times
- ✓ Complication Rates from Thrombolytics and Thrombectomies
- ✓ Hemorrhagic Strokes: ICH, SAH
 - Scoring, Medication, Drains, Coiling, Clipping of Aneurysms
- ✓ 90 Day Rankin scores for patients treated



UPSTATE COMPREHENSIVE STROKE CENTER		2022 CSC Quality Dashboard														
CSC Metrics 2022			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD totals	
Metric 1: % of all ischemic, <u>hemorrhagic</u> stroke/ TIA patients w/deficit at the time of initial RN note, ED MD or neurology consult note for whom an NIHSS score is documented.	%	84%														
	Num	31														
	Den	37														
Metric 2: % of Ischemic stroke pts who arrive with 3.5 hrs of LKW and for whom IV thrombolytic was initiated within 4.5 hrs of LKW. **GWTG 3.5-4.5	%	100%														
	Num	2														
	Den	2														
Metric 4: Time from arrival to the start of <u>advanced imaging</u> (CTA,CTP, MRI, MRA) for all patients who arrive within 24 hours of LKW (median)	min	8														
Metric 6: Median time from arrival to skin puncture to access the artery selected for EVT (brachial, carotid, femoral, radial) - All cases. *CSTK-09	min	88														
Metric 6A: Median time from arrival to skin puncture to access the artery selected for EVT (brachial, carotid, femoral, radial) for patients transferred from another hospital.	min	50														
Metric 6B: Median time from arrival to skin puncture to access the artery selected for EVT (brachial, carotid, femoral, radial) for patients who present directly to Upstate.	min	94														

Data Abstraction

Types of abstraction

1. Concurrent
2. Retrospective
3. Combination

Patient ID Bold Question = Required

DEMOGRAPHICS Demographics Tab

Sex: ☐ Male ☐ Female ☐ Unknown

Patient Gender Identity: _____ Patient-identified Sexual Orientation: _____

Date of Birth: ____/____/____ Age: _____

Zip Code: _____ ☐ Homeless

Payment Source: ☐ Medicare Title 18 ☐ Medicaid Title 19 ☐ Medicare - Private/ HMO/ PPO/ Other ☐ Medicaid - Private/ HMO/ PPO/ Other ☐ Self Pay/ No Insurance ☐ Other/ Not Documented/ UTD ☐ VAI/ CHAMPVA/ Tricare

What is the patient's source of payment for this episode of care? ☐ Medicare ☐ Non-Medicare

RACE AND ETHNICITY

Race (Select all that apply):

☐ American Indian/Alaska Native ☐ Black or African American ☐ Asian ☐ Native Hawaiian or Pacific Islander

☐ [if Asian selected] ☐ [if native Hawaiian or Pacific Islander selected]

☐ Asian Indian ☐ Chinese ☐ Filipino ☐ Japanese ☐ Korean ☐ Vietnamese ☐ Other Asian ☐ White ☐ UTD

Hispanic Ethnicity: ☐ Yes ☐ No/UTD

If Yes: ☐ Mexican, Mexican American, Chicano/a ☐ Puerto Rican ☐ Cuban ☐ Another Hispanic, Latino or Spanish Origin

Admit Date:

Discharge Date:

Diagnosis:

Dx Code:

CTA:

CTP:

Procedure Code:

MRI:

Outside Imaging:

PMT-Our version

Local Database- We use Access
Start small- Just what you need

National Database- GWTG- AHA/ASA

Data Abstraction

- ✓ Build a patient list- Who belongs in our “bucket”
- ✓ Begin abstraction- Special attention to H&P, time targets, core measures
- ✓ This is where paper tool and our database begin
- ✓ Calls, emails, messages regarding time sensitive items and documentation- it's easier to remember when it's fresh
- ✓ Time to investigate the abnormalities, both good and bad
- ✓ Finish abstraction post-discharge
- ✓ Entry of data into GWTG
- ✓ Reminder- Quality begins before the patient reaches our doors

Case Feedback – EMS- Monthly Feedback

Arrival Date/Time

PCR Run Number:

Missing PCR? ☐

ED arrival options ☐ EMS from home to ED

Providers

Advanced Notification provided? ☒

Was prenotification call documented? ☒

Scene Time (hh:mm) 0:12

Patient Contact to Scene Departure (hh:mm) 0:10

Blood Glucose Value 144

Feedback Note
pt found catatonic and non-verbal. While driving vehicle, accelerated to the the vehicle in front of him and had AMS; directed by bystander to passenger side to wait for EMS.

IV Thrombolytic Given ☐

Thrombectomy ☐

TICI Achieved

Discharge Diagnosis ICH

Discharge Disposition Acute-Rehab

Case Feedback – EMS- Case Feedback

UPSTATE

COMPREHENSIVE STROKE CENTER

EMS Feedback

To the members of:

Lifenet Air Methods

Please see the list below for any stroke or presumptive stroke patients transferred by your agency to Upstate for neurological evaluation and/or advanced stroke therapies. The patients are identified by agency run number/case number and the date of admission. Other quality indicators have been pulled from your PCR, if available, including scene time, blood glucose, and evidence of advanced notification by your providers. Discharge information/stroke type has also been provided for your reference.

Arrival Date/Time		Advanced Notification provided?	<input checked="" type="checkbox"/>	MER	
PCR Run Number:		Was prenotification call documented?	<input checked="" type="checkbox"/>	TICI Achieved	<input checked="" type="checkbox"/>
Missing PCR?	<input type="checkbox"/>	Scene Time	0:07	DischargeDiagnosis	2b
ED arrival options	EMS from home to ED	Blood Glucose Value	121	DischargeDisposition	Ischemic
Providers		tPA Given	<input checked="" type="checkbox"/>		Home
		Feedback Note	Pt was walking with his wife when he suddenly collapsed, unable to move right side or communicate w/wife. Pt found w/R. hemiparesis, facial droop and expressive aphasia.		

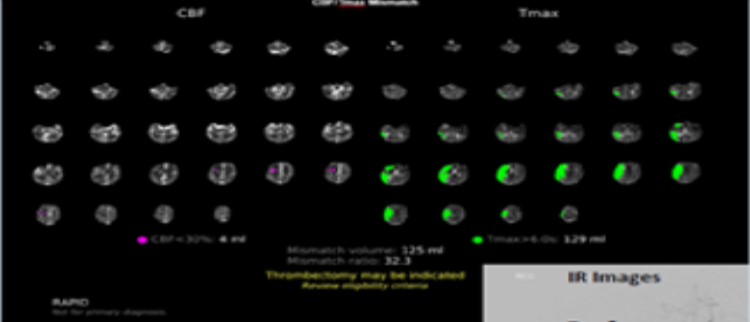

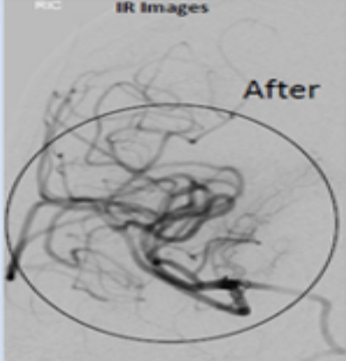
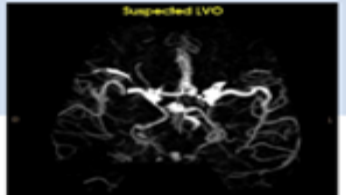
Case Feedback – EMS- Thrombectomy Case Feedback

UPSTATE COMPREHENSIVE STROKE CENTER

Presentation: 79 year old male

Presented to Wilson Hospital after his wife heard a fall at 0400 with the patient mumbling and unable to get up with left sided weakness. Transferred via Air to Upstate. Stroke code called upon arrival and CT/CTA/CTP done-deemed eligible for thrombectomy → Thrombectomy completed with partial reperfusion. Patient recovered well. Some residual deficits he will continue to work on in rehab.

PMH: Atrial fibrillation-on Eliquis, Hypertension, Hyperlipidemia, Diabetes Mellitus, Obstructive Sleep Apnea, Obesity

Pre Hospital Care	Hospital Care	Discharge	Case Images CT perfusion, CTA, Thrombectomy	
<p>Call Received: 0725 Scene Arrival: 0740 Scene Departure: 0808 Arrival to Upstate: 0853</p> <p>Pre-notification: Yes</p>	<p>ED Stroke page: Yes</p> <p>Arrival to Upstate: 0853 Transfer of Care: 08:56 Admission NIHSS: 10</p> <p>Thrombectomy TICI 2B Achieved post thrombectomy (TICI score ranges from 0-3/reperfusion score) *achieved partial reperfusion</p> <p>Diagnosis: Right MCA ischemic stroke -cardioembolic source (Atrial fibrillation)</p>	<p>Discharge Date:</p> <p>Placed on coumadin and will have an outpatient TEE for a planned watchman device.</p> <p>Discharge NIHSS: Pending Current NIHSS: 3 Left sided weakness, gait imbalance and some residual dysphagia.</p>	<p>Occluded Artery: Right Middle Cerebral Artery (M1 occlusion)</p>  <p>CT Perfusion: showing mismatch-deemed eligible for thrombectomy</p> <p>IR Images Before</p>  <p>IR Images After</p>  <p>Suspected IVO</p> 	
	<p>Patient Care Team</p>	<p>Confidential information: Protected by NYS Ed, Law 6527& Public Health Law 280-5 NO DISCLOSURE OF ABOVE INFORMATION IS ALLOWED.</p> <p>Raisa Zhovklyaya, BSN, RN, SCRNI Stroke Program Outreach Coordinator Upstate University Hospital Zhovklyar@Upstate.edu</p>		

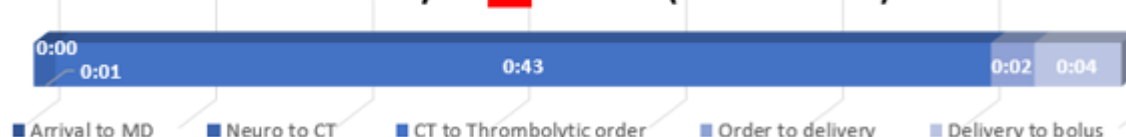
Case Feedback – Thrombolytic Case Review

Acute Stroke Treatment: Tenecteplase (TNK) Case Review

Stroke Program Medical Director: Gene Latorre, MD, MPH, FAAN, FAHA, FNCS, FCCM

Stroke Program Manager: Joshua L. Onyan, BSN, RN, SCRNP

Onset to Thrombolytic=50 minutes (Goal < 30 min)



Series "Neuro to CT" Legend Entry

	Case Time	Elapsed Time	Goal
Stroke Page			
Arrival			
ED MD			<10
Neuro MD		0:00	<15
Imaging initiated		0:01	<25
Imaging results reported		0:16	<45
Thrombolytic order		0:44	
Thrombolytic delivery		0:46	
Thrombolytic bolus		0:50	<30

EMS	Patient Presentation	
EMS: Lifenet Air Methods Scene time: 40 minutes Prenotification: YES	Presentation: 78 YO male with sudden R gaze, L sided weakness and inability to speak while driving. Pt was able to stop vehicle and had minor collision with a wall without much damage. He was airlifted to Upstate. Time LKW: 12:30 Meds: none but history of Xarelto in EHR had to be confirmed PMH: COPD, diverticulitis NIHSS admission : 6 NIHSS post tx: Additional Information: Case Outcome/Discharge Information: Acute Ischemic Stroke ,R MCA aborted by TNK, with new onset Afib Cardiology consulted, placed implantable loop recorder, discharged home 12/22 on anticoagulation with NIHSS 0.	Case Comments/Discussion: per Stroke resident H&P 1. IV thrombolytics Delay >30 Min: Care-team unable to determine eligibility. Reason: had to speak with patient's wife, son and friend to determine correct last known well, as well as confirm that patient doesn't take any anticoagulation at home (had rivaroxaban listed as one of the medications in RHIO which family stated patient is not taking). Other: Stroke resident wasn't able to complete NIHSS as per primary team attending's request to obtain images first, patient received Ativan in CT scanner that confounded his exam and complicated decision making.

ED Stroke Team:
 Neuro Stroke MDs (Resident/Fellow/Attending):
 Neuro SWAT RN:
 Radiology/Pharm:

Stroke Program Reviews: MV 1/12/22, JO 1/13/22

Case Feedback -Thrombectomy Case Review



MRN/DATE:

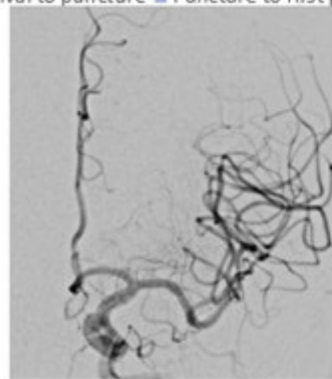
Mechanical Endovascular Reperfusion (MER) Case Review

Patient arrived to ED via EMS

Door to First Pass = 93 minutes (Goal <90 minutes)



■ Arrival to Image ■ Image to Activation ■ Activation to IR Arrival ■ IR Arrival to puncture ■ Puncture to first pass ■ Puncture to Reperfusion



Arrival time	
Image time	
Activation time	
IR Arrival time	
Puncture	
First Pass	
Reperfusion	

Presentation: 86 year old female presents to ED via EMS pre-notified, with sudden onset right sided weakness with gaze deviation to the left and not speaking .

LKW: 1030

PMHx: Atrial fibrillation, CAD, HLD

NIHSS on arrival: 26

Thrombolytic: Received teneceplase at 1225

CTA: Abrupt cut off/occlusion of the left MCA proximal to the bifurcation

Post NIHSS: 25 on 1/12

TICI Grade: 3

Additional Information:

Reviewed: PEV 2/3/22

CC: NIR (ED)

Case Comments:

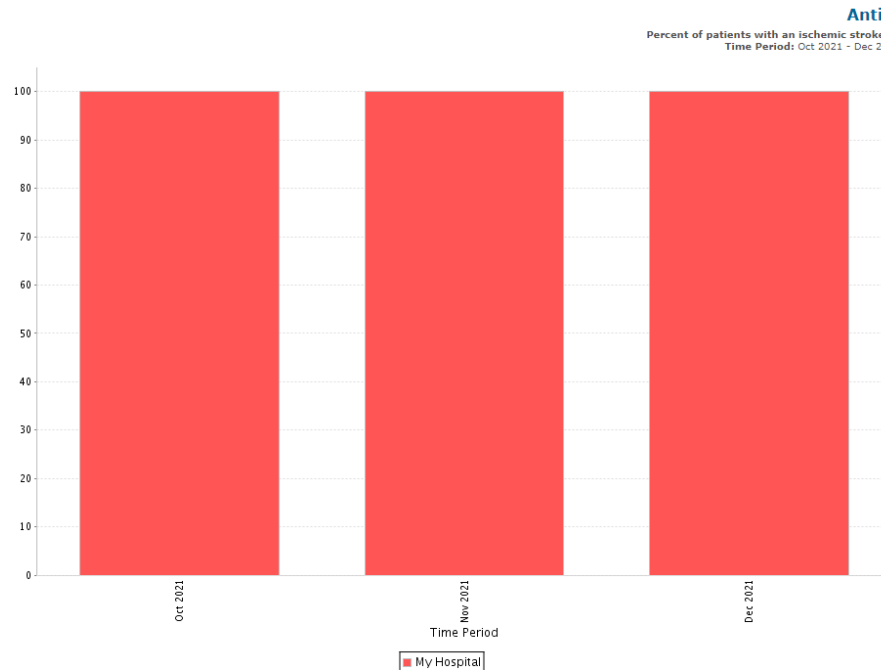
1) Intubated by anesthesia in NIR.

Confidential information: Protected by NYS Ed, Law 6527& Public Health Law 280-5

NO DISCLOSURE OF BELOW INFORMATION IS ALLOWED

Data Preparation: reports for ongoing use/track and trend

- ✓ GWTG - Run multiple reports “add another”
- ✓ Save your own series of reports “Predefined measure reports”
- ✓ Export to Excel
- ✓ Show numerators & denominators with %



Antithrombotics				
Benchmark Group	Time Period	Numerator	Denominator	% of Patients
My Hospital	Oct 2021	45	45	100.0%
	Nov 2021	25	25	100.0%
	Dec 2021	30	30	100.0%

	A	B	C	D	E	F	G
1	Benchmark	Time Period	Numerator	Denominator	% of Patients		
2	My Hospital	Oct 2021	45	45	100.0%		
3	My Hospital	Nov 2021	25	25	100.0%		
4	My Hospital	Dec 2021	30	30	100.0%		
5							
6							
7							

[Print](#) | [Export to Excel](#)

Data Preparation: for one time use or QI research

- ✓ **GWTC – Data Download** to a file
(not as hard as you think)
- ✓ Looking at a large amount of data
- ✓ Need for deep dive or looking at case patterns, etc
- ✓ **Benchmarking** – your stroke center vs NYS vs all PSC

Data Preparation Tips

- ✓ Keep a spreadsheet up as you abstract minimally to match MRNs with GWTG de-identified case numbers
- ✓ Keep the data you present to your hospital stroke group less than 2 pages- easy for you, for them and for Joint Comm/DNV- “one stop shop”. Remember KIM
- ✓ Ask for feedback –Did the way I presented this make sense to you?



Tips for participation in Quality efforts:

- ✓ Emails providers or EPIC chat or secure text in real time as you are reviewing chart (the good and the bad).
Keep the communication lines open.
- ✓ Shared file on Teams with outliers or misses listed. Ask someone to “champion” a section and ask for a quick comment on any “misses” or steps taken to improve. (Accreditors love this!)
- ✓ Help teams with cheat sheets, badge buddies, checklists – “when we have stroke- this is what we do!”
- ✓ Use recognition, reward systems, certificates
- ✓ Post data sheets where staff can see-take credit.



Summary

- ❑ Realize that **quality** is always a work in progress
- ❑ Separate requirements into manageable sections, simple is better
- ❑ Ask others for advice (even accreditors) and be willing to **share** –more than one way to do things



CWSC
Central and Western New York
Stroke Coordinators Consortium

Thank you!