Advancing Stroke Systems of Care to Improve Outcomes
Target: Stroke Phase III

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ACUTE ISCHEMIC STROKE REPERFUSION THERAPY

The benefits of acute ischemic stroke treatment both with intravenous tissue plasminogen activator (tPA) or endovascular therapy are highly time dependent.

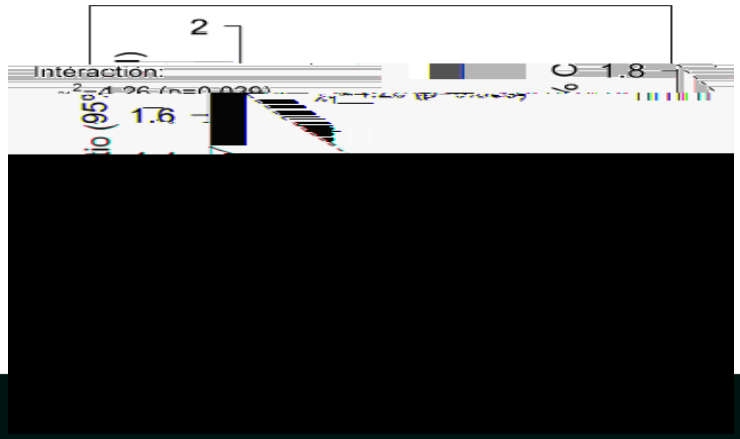
Shorter onset to treatment times are associated with improved functional outcomes, lower complication rates, and in some studies lower mortality.

Because of the importance of rapid treatment, AHA/ASA Guidelines recommend a door-to-QHHGOH '71 WLPH RI ” PLQXWHV IRU ,9 DOWHSODVH

Yet prior studies indicated fewer than 30% of IV alteplase treated acute ischemic stroke patients in the United States were meeting this goal.

Fonarow GC, Smith EE, Saver JL, Reeves MJ, Bhatt DL, Grau-Sepulveda MV, Olson DM, Hernandez AF, Peterson ED, Schwamm LH. Timeliness of tissue-type plasminogen activator therapy in acute ischemic stroke: patient characteristics, hospital factors, and outcomes associated with door-to-needle times w

EFFECT OF INTRAVENOUS ALTEPLASE IS TIME DEPENDENT



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rate

Trials –
Pooled RCTs

Practice –
National GWTG-Stroke

Stroke 2016;47:2373-2379
Circulation 2017;135:128–139

American Heart Association.

AHA/ASA Guideline Recommendations

EDs should establish standard operating procedures and protocols to triage stroke patients expeditiously (Class I, Level of Evidence B).

Standard procedures and protocols should be established for benchmarking time to evaluate and treat eligible stroke patients with rt-PA expeditiously (Class I, Level of Evidence B).

Target treatment with rt-PA should be within 1 hour of the patient's arrival in the ED (Class I, Level of Evidence A).

TARGET: STROKE PHASE I

- Target: Stroke was initiated by the AHA/ASA as a national collaborative comprising a broad alliance of hospitals and clinicians.
- The goal of Target: Stroke was for GWTG participating hospitals to treat at least 50% of alteplase treated acute ischemic stroke patients within 60 minutes of hospital arrival.
- An expert working group performed a literature review to identify 10 key evidence-based strategies associated with timely alteplase administration that could be most rapidly and feasibly adopted by hospitals.

Fonarow GC et al. JAMA. 2014;311(16):1632-1640.

TARGET: STROKE 10 KEY BEST PRACTICE STRATEGIES

1. Hospital pre-notification by Emergency Medical Services
2. Rapid triage protocol and stroke team notification
3. Single call/paging activation system for entire stroke team
4. Use of a stroke toolkit containing clinical decision support, stroke-specific order sets, guidelines, hospital-specific algorithms, critical pathways, NIH Stroke Scale and other stroke tools
5. Rapid acquisition and interpretation of brain imaging
6. Rapid Laboratory Testing (including point-of-care testing) if indicated
7. Pre-mixing alteplase medication ahead of time for high likelihood candidates
8. Rapid access to intravenous alteplase in the ED/brain imaging area
9. Team-based approach
10. Rapid data feedback to stroke team on each patient's DTN time and other performance data

Fonarow GC et al Stroke. 2011;42:2983-2989.

TARGET: STROKE RESULTS: alteplase USE

The Target: Stroke intervention was also associated with an increase in alteplase use.

alteplase use in eligible patients arriving by 2 hours and treated by 3 hours: 64.7% pre- vs. 85.2% post-intervention, P<0.0001

alteplase use in eligible patients arriving by 3.5 hours and treated by 4.5 hours: 22.5% pre- vs. 63.9% post-intervention, P<0.0001

alteplase use among all acute ischemic stroke patients: 5.7% pre- vs. 8.1% post-intervention, P<0.0001

No evidence for unintended consequences with the intervention with alteplase use being avoided in patients who may have less favorable DTN times

Fonarow GC et al. JAMA. 2014;311(16):1632-1640.

Clinical Outcomes Pre- and Post-Target: Stroke in Patients in Patients with Onset to Treatment Time within 4.5 Hours

Outcome	Pre-Target: Stroke (n=29,986)	Post-Target: Stroke (n=53,234)	P Value	Unadjusted Odds Ratios (95% CI)	P Value	Adjusted Odds Ratios (95% CI)*	P Value*
In-Hospital Mortality	9.95%	8.08%	<0.0001	0.79 (0.75-0.84)	<0.0001	0.90 (0.84-0.95)	0.0004
Discharge Home	37.6%	43.3%	<0.0001	1.25 (1.20-1.29)	<0.0001	1.13 (1.08-1.17)	<0.0001
Ambulatory Status Independent	42.2%	45.9%	<0.0001	1.16 (1.10-1.22)	<0.0001	1.02 (0.96-1.09)	0.4538
Symptomatic ICH	5.74%	4.74%	<0.0001	0.81 (0.75-0.88)	<0.0001	0.84 (0.78-0.92)	<0.0001
Any alteplase Complications	6.75%	5.54%	<0.0001	0.80 (0.75-0.86)	<0.0001	0.84 (0.78-0.91)	<0.0001

Target: Stroke Phase II

TARGET: STROKE PHASE II

NATIONAL GOAL:

- Target: Stroke Phase II was launched in 2014 with a goal of improving DTN times to
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- This study aimed to assess whether DTN times and outcomes could be further
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  Target: Stroke (2003-2009), Phase I (2010-2013), and Phase II (2014 to 2018) periods
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- Treatment rates and clinical outcomes of in-hospital mortality, discharge home, and
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Time Trend in DTN Times within 60 and 45 Minutes Pre-Target: Stroke, Target: Stroke Phase I, and Target: Stroke Phase II

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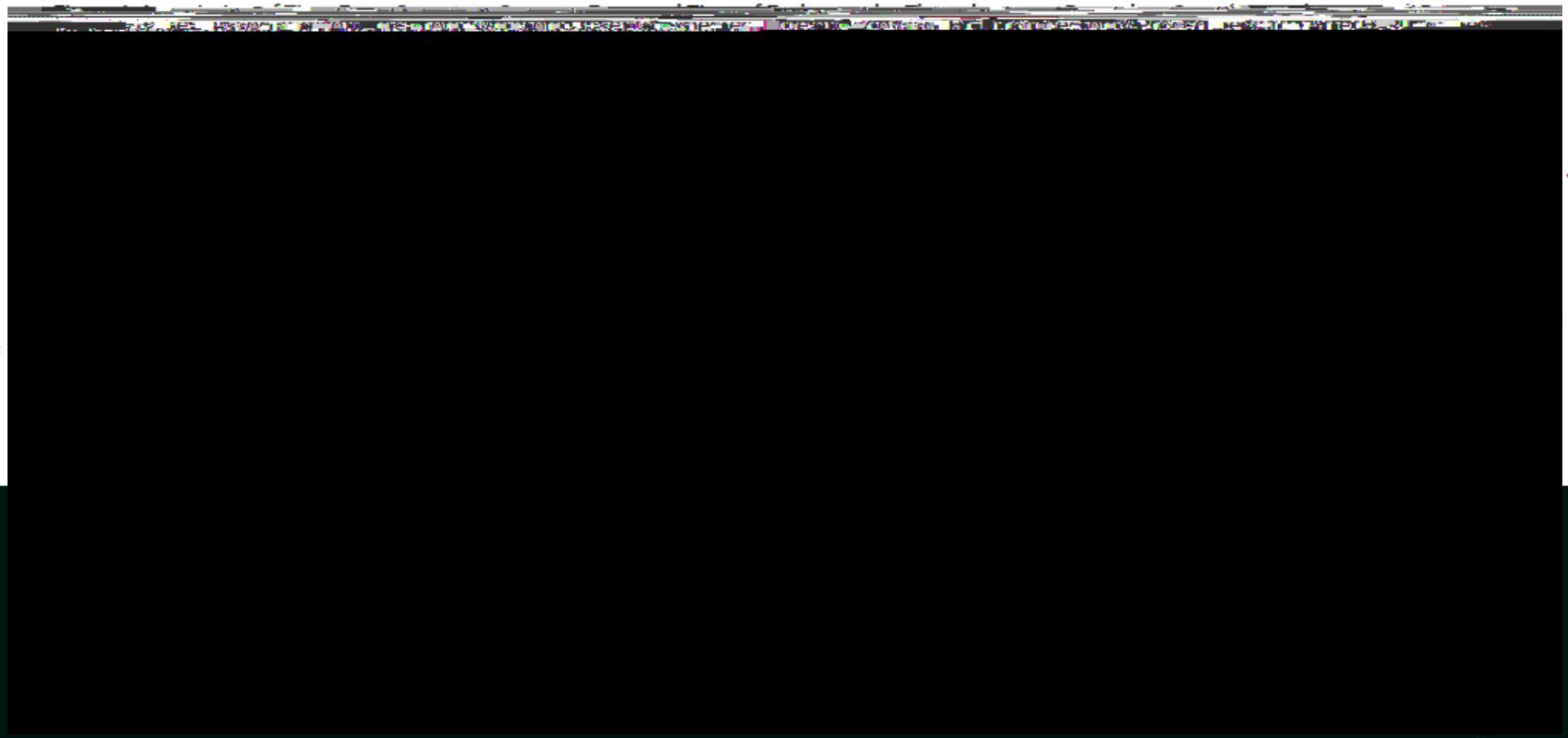
Clinical Outcomes Pre-Target: Stroke, Target: Stroke Phase I, and Target: Stroke Phase II

Outcome	Pre-Target: Stroke (n=24,365)	Post-Target: Stroke Phase I (n=44,257)	Post-Target: Stroke Phase II (74,447)	P value	Adjusted OR 95% CI (Phase I vs Pre Target: Stroke)	Adjusted OR 95% CI (Phase II vs Pre Target: Stroke)
In-Hospital Mortality	10.0%	8.2%	6.2%	<0.0001	0.85 (0.80-0.91)	0.72 (0.67-0.77)
Discharge Home	35.8%	41.5%	49.0%	<0.0001	1.21 (1.16-1.27)	1.35 (1.27-1.45)
Ambulatory Status Independent	41.5%	44.6%	52.7%	<0.0001	1.05 (0.99-1.22)	1.35 (1.27-1.45)
Symptomatic ICH within 36 Hours	5.7%	4.5%	3.6%	<0.0001	0.79 (0.72-0.86)	0.67 (0.61-0.73)

TARGET: STROKE PHASE III



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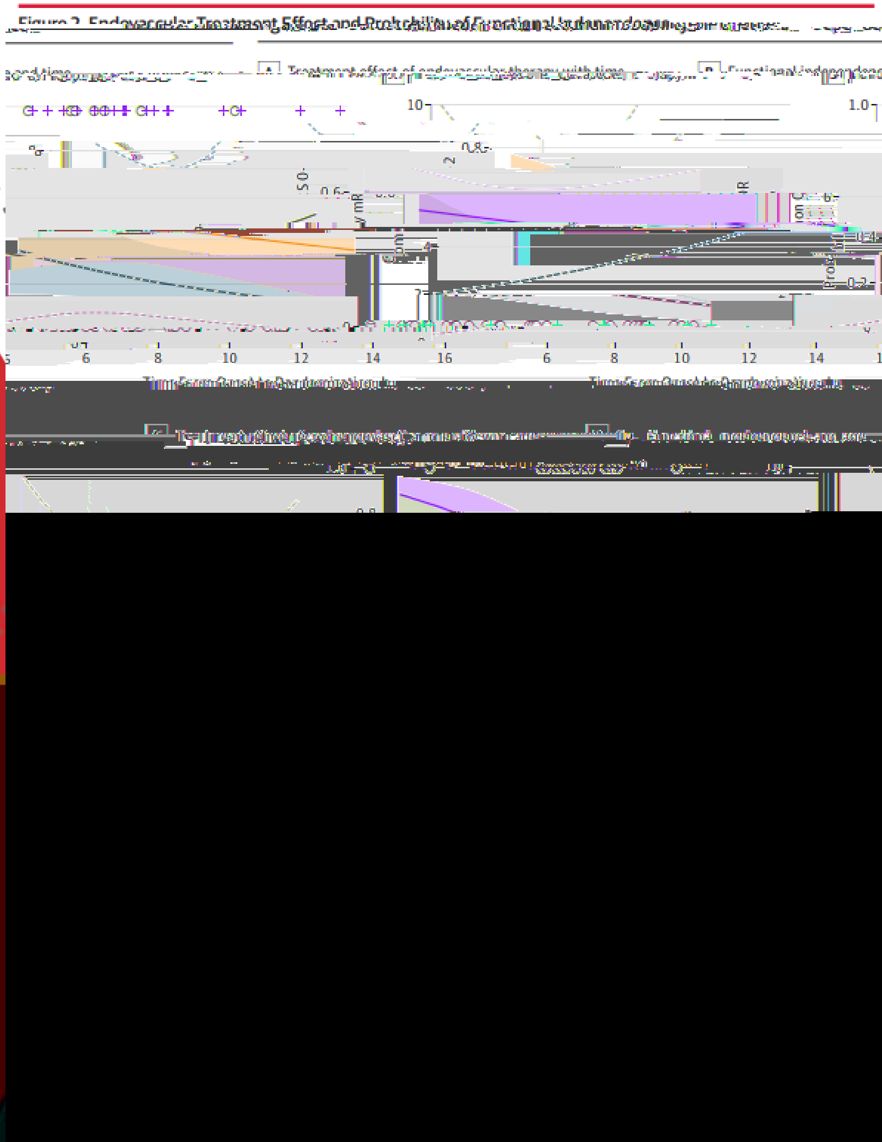
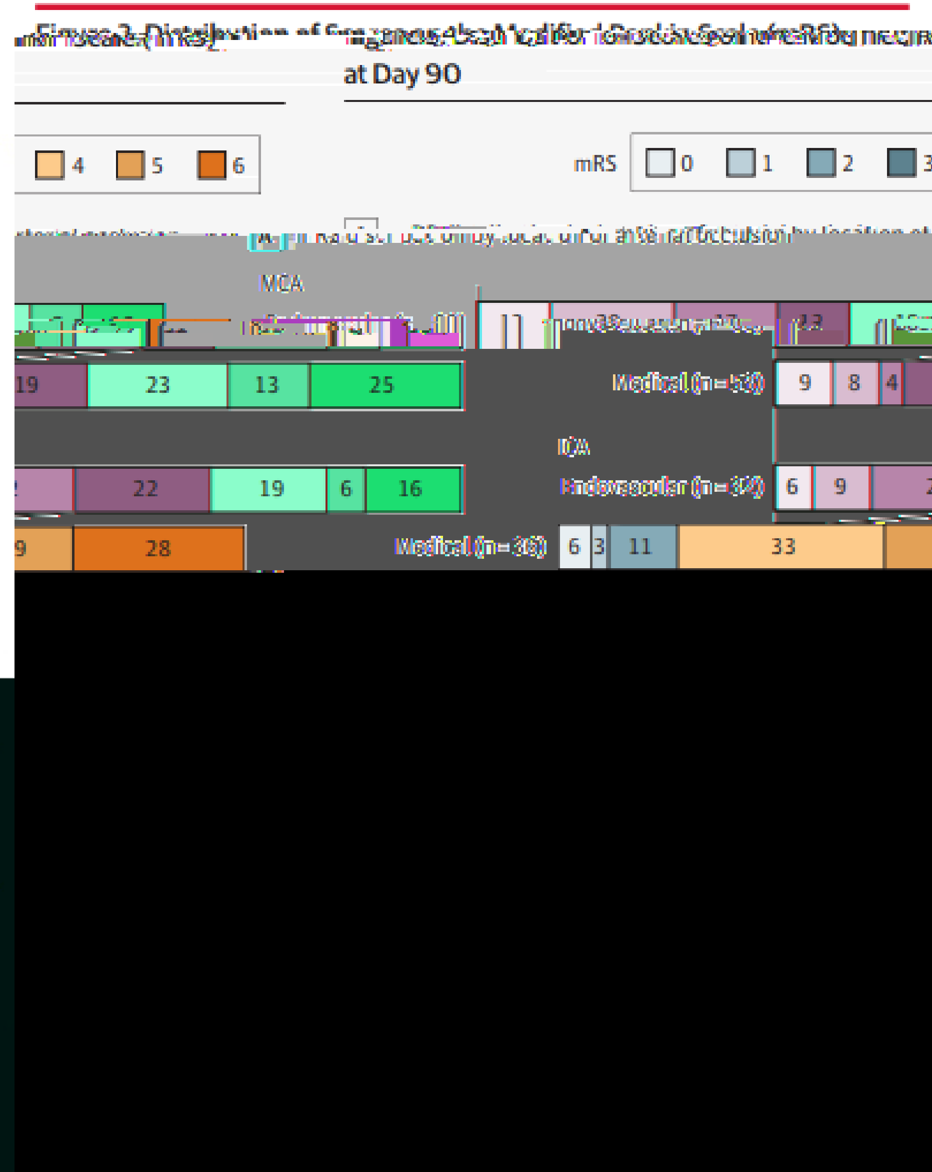
imaging [illegible] location [illegible]





TARGET: STROKE PHASE III NATIONAL GOALS

PRIMARY GOALS:

- Achieve door-to-needle times within 60 minutes in 85% or more of acute ischemic stroke patients treated with IV thrombolytics
- Achieve **door-to-device** times (arrival to first pass of **thrombectomy** device) in 50% or more of eligible acute ischemic stroke patients within 90 minutes (for direct arriving patients) and within 60 minutes (for transfer patients) treated with endovascular therapy (EVT)

SECONDARY GOALS:

- Achieve door-to-needle times within 45 minutes in 75% or more of acute ischemic stroke patients treated with IV thrombolytics
- Achieve door-to-needle times within 30 minutes in 50% or more of acute ischemic stroke patients treated with IV thrombolytics

Target: Stroke Phase III Door -to- Device Time Key Best Practice Strategies

Target: Stroke advocates the adoption of these 12 key best practice strategies for reducing door-to-device times for endovascular therapy in acute ischemic stroke.

- Rapid Administration of Alteplase
- Rapid Acquisition and Interpretation of CT/MR Angiography
- Rapid Acquisition and Interpretation of Additional Imaging
- Pre-Notification and Rapid Activation of the Neurointerventional Team
- Rapid Availability of the Neurointervention Team
- Timer or Clock Attached to Chart, Clip Board, or Bed
- Transfer Directly to Neuroangiography Suite
- Transfer Directly from Brain Imaging Suite to Neuroangiography Suite
- Neuroangiography Suite
- Team Based Approach

TARGET: STROKE PHASE III RECOGNITION

- HONOR ROLL
- HONOR ROLL ELITE
- HONOR ROLL ELITE PLUS
- HONOR ROLL ADVANCED THERAPY

Recognition Eligibility (continued)

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Conclusions

- Findings from Target: Stroke Phase I and II support the favorable impact of applying performance improvement techniques: identifying best practices, clinical decision support, guideline-driven care improvement tools, educational outreach, collaborative support, performance profiling, feedback, and recognition.
- Programs to facilitate rapid administration of thombolytics such as Target: Stroke have substantially improved care and outcomes and should be applied globally
- Target: Stroke Phase II goals were achieved
- Target: Stroke Phase III aims to facilitate and incentive hospitals and stroke systems of care to provide IV thrombolytic and endovascular therapy to eligible patients with acute ischemic stroke in a timely fashion.
- Target: Stroke Phase III is designed to further improve care and outcomes for patients with acute ischemic stroke.

TARGET: STROKE PHASE PMTUPDATE

SUMMARY OF UPDATES

- TARGET: STROKE 3 UPDATES
  - Stroke / Limited form
  - MER form
  - Measures
- ADDITIONAL MEASURE UPDATES
  - DIDO measure
- TJC LAYER UPDATES
  - STK-OP-1 and CSTK-01 added to STK layer
  - ASR-IP and ASR-OP measure bundles
- OPERATIONAL UPDATES
  - Removed error when not completing advanced imaging questions
  - CSTK benchmarking error when running CSTK-10 report
  - New filter options
  - Additional items

STROKE FORUM REASON FOR DELAY IN IV ALTEPLASE MINUTES

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MER FORMADDED “DOCUMENTATION OF FIRST PASS” DATA ELEMENT

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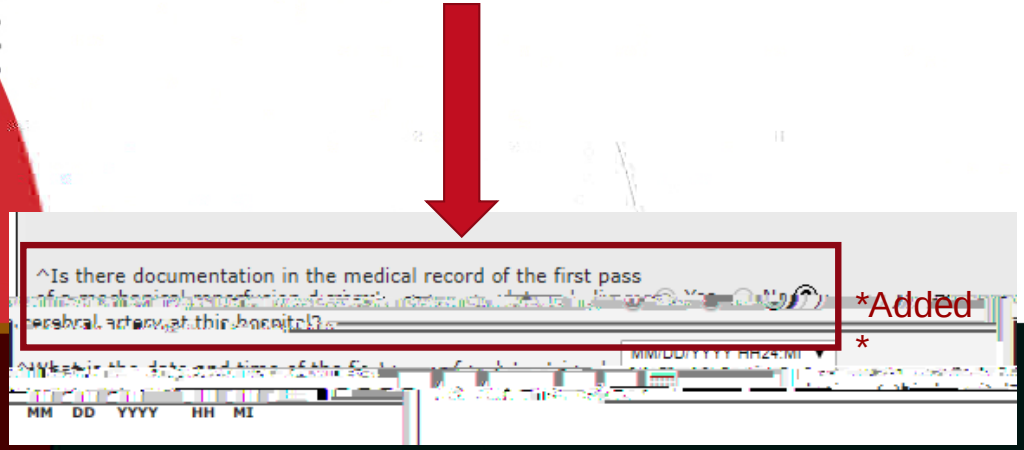

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- Used for collection of first pass time for Target: Stroke Advanced

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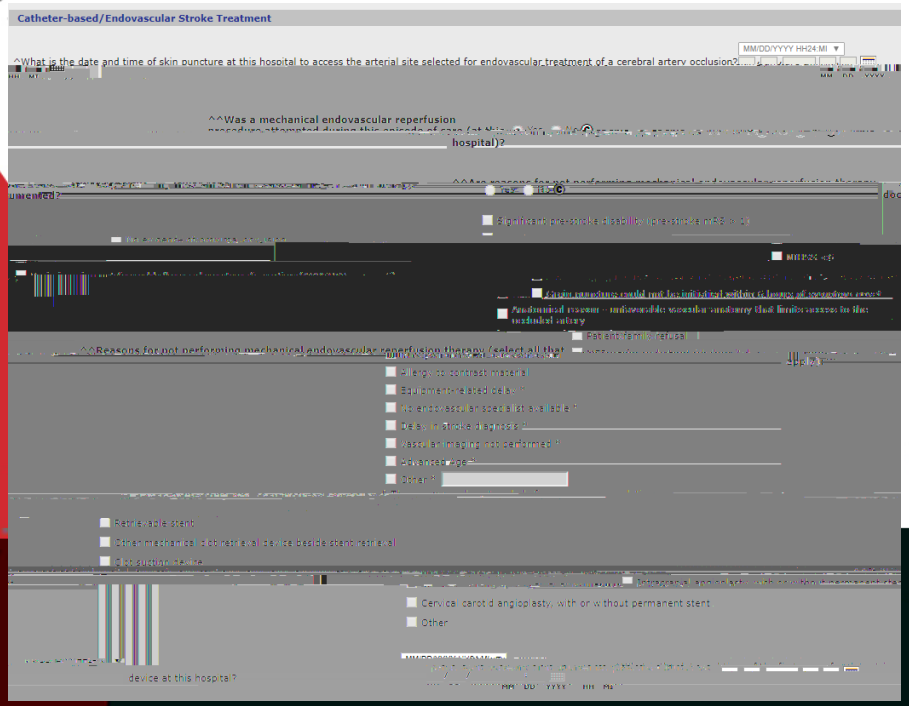
MER FORM DOCUMENTATION OF FIRST PASS



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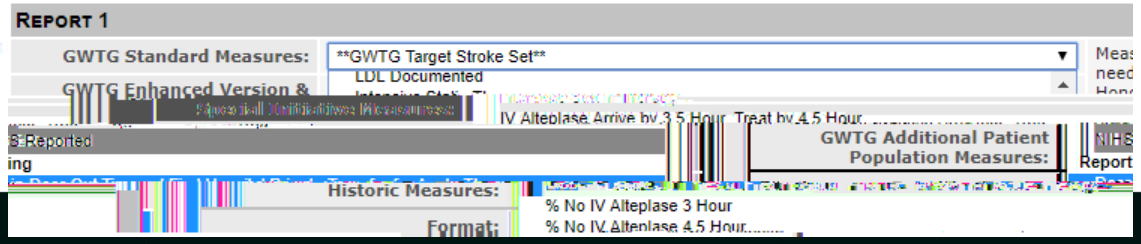
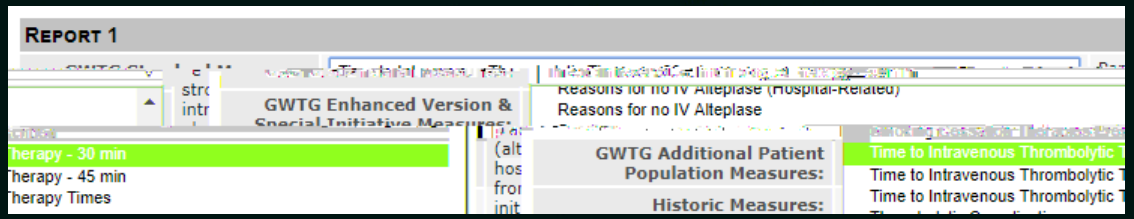
UPDATED TARGET: STROKE MEASURES

Added:

- Door-in-Door-Out Times at First Hospital Prior to Transfer for Acute Therapy
- Time to Intravenous Thrombolytic Therapy 30 min
- Door to Start of Z À • µ o Œ] Ì š] } v ~ d minutes for patients transferred from an outside hospital OR 90 minutes for patients presenting] Œ š o Ç X





New Reporting Measures

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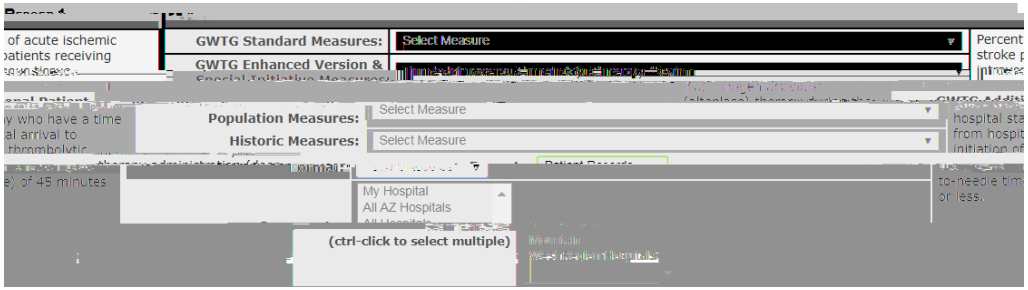
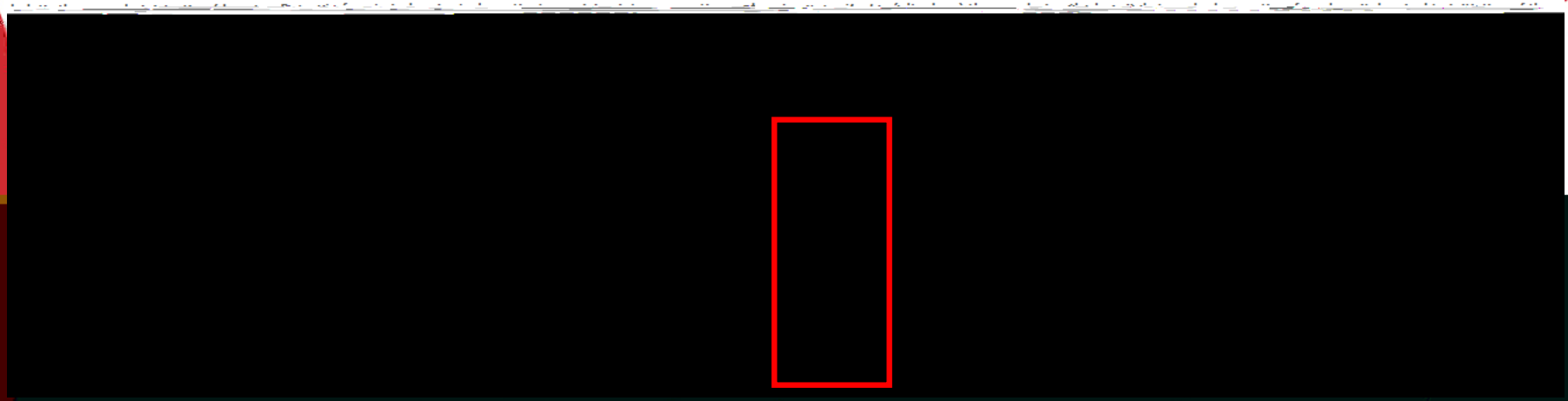
UPDATE "TIME TO INTRAVENOUS THROMBOLYTIC THERA 45 MIN" MEASURE LOGIC





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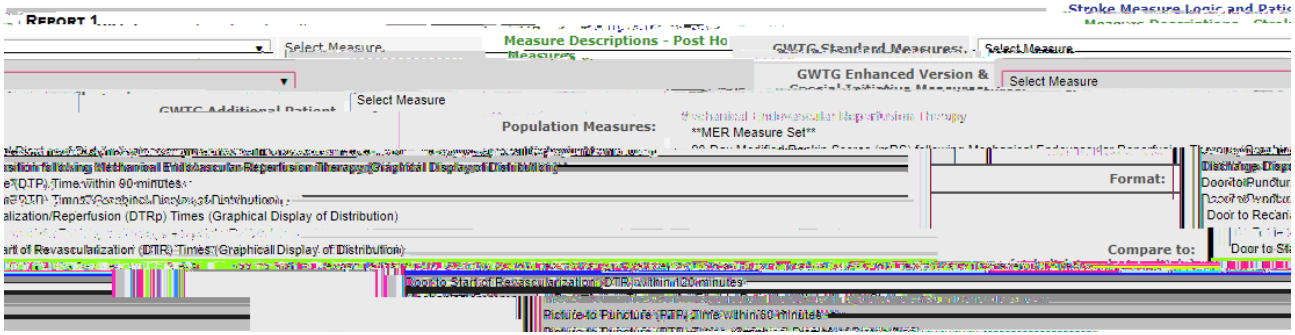
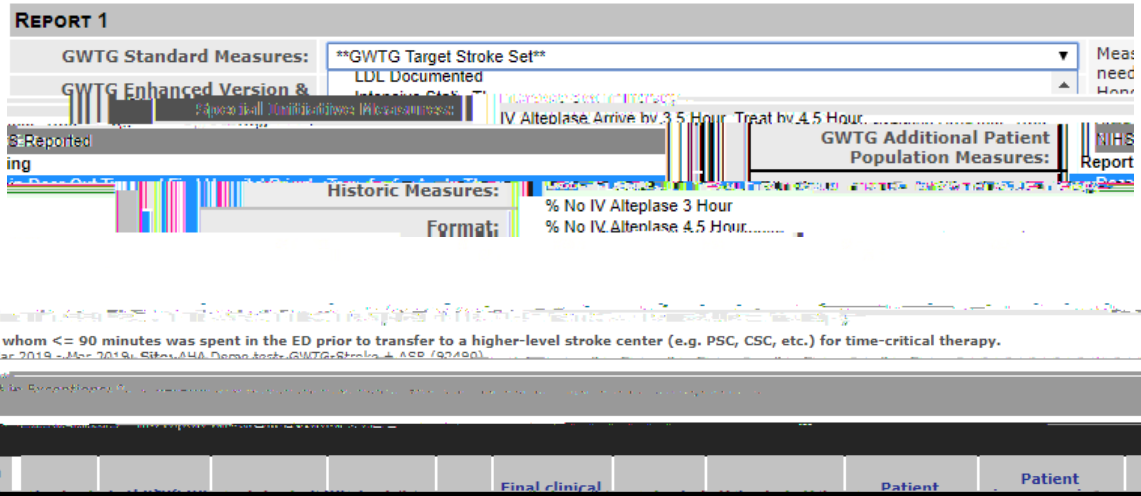
ADDED MEASURE: DOOR TO START OF REVASCULARIZATIO

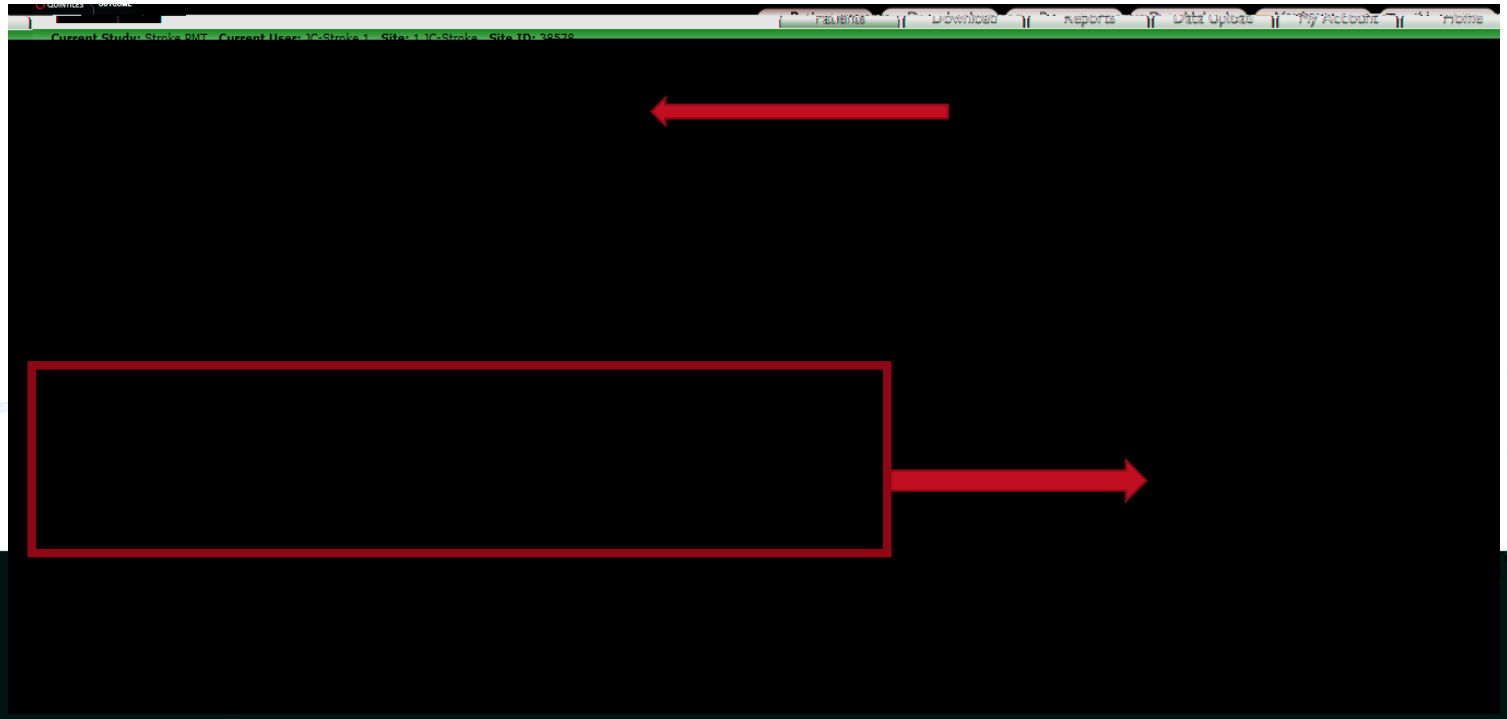


ADDITIONAL MEASURE UPDATES

DOOR-IN-DOOR-OUT TIMES AT FIRST HOSPITAL PRIOR TO TRANSFER FOR ACUTE THERAPY



REASON FOR TRANSFER



Requires “Select reason(s) for why patient transferred” when
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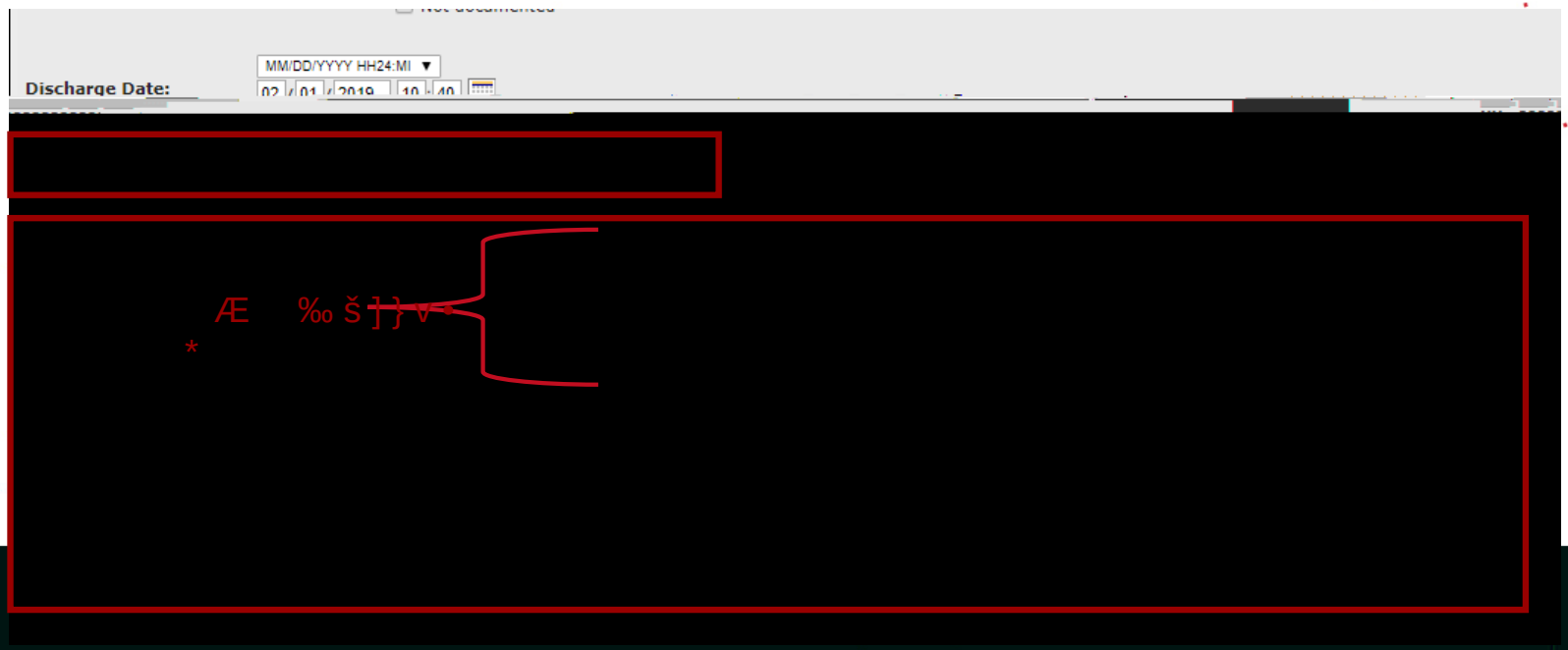
STROKE FORM – REASON FOR DELAY IN TRANSFER



(Door-in-Door-Out Times at First Hospital Prior to Transfer for Acute Therapy)

*Removed from the denominator if present and numerator is not met

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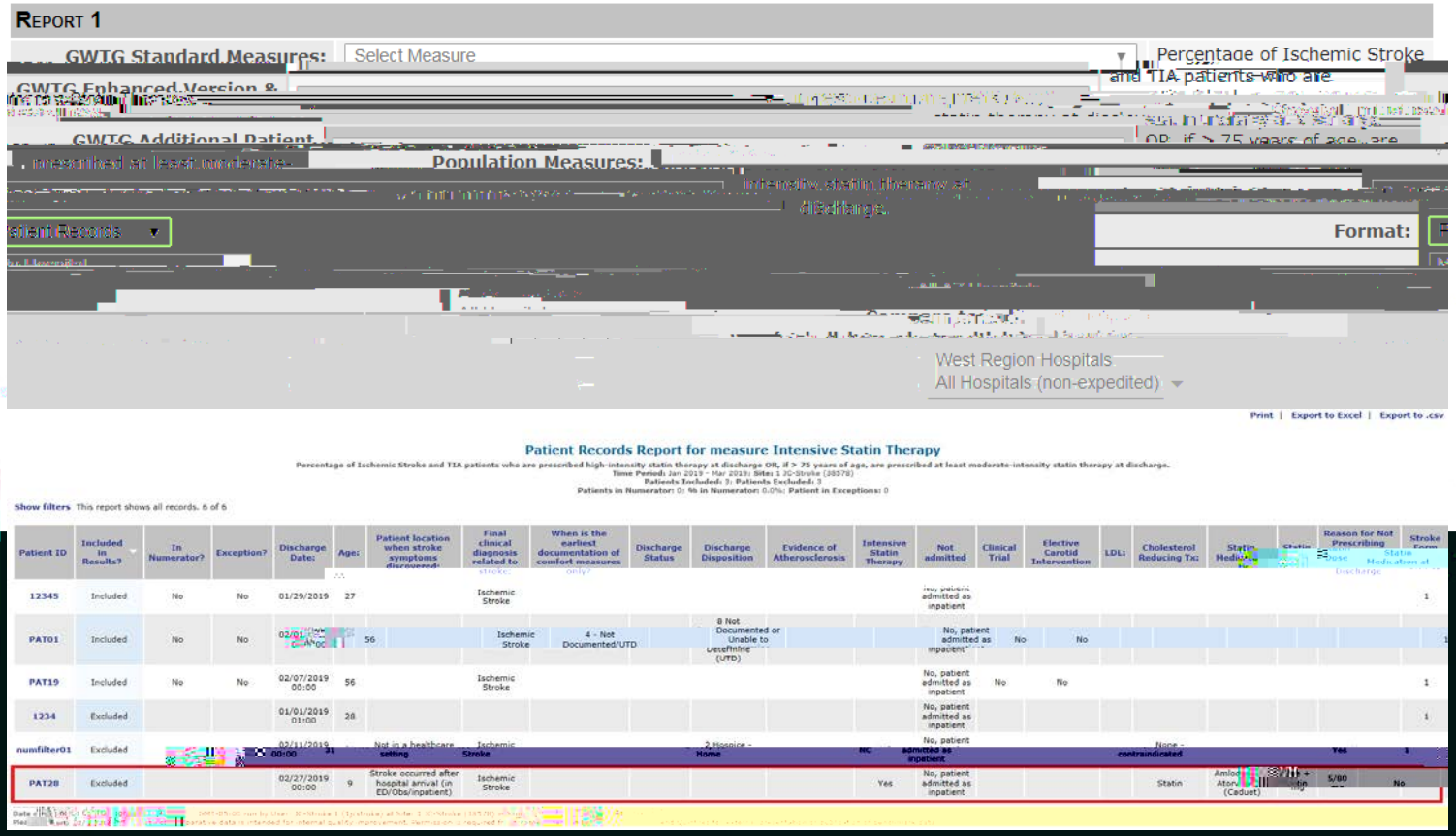
INTENSIVE STATIN THERAPY (QUALITY MEASURE)



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UPDATED MEDICAL HISTORY MEASURE

Added:
Inclusion– s d l W

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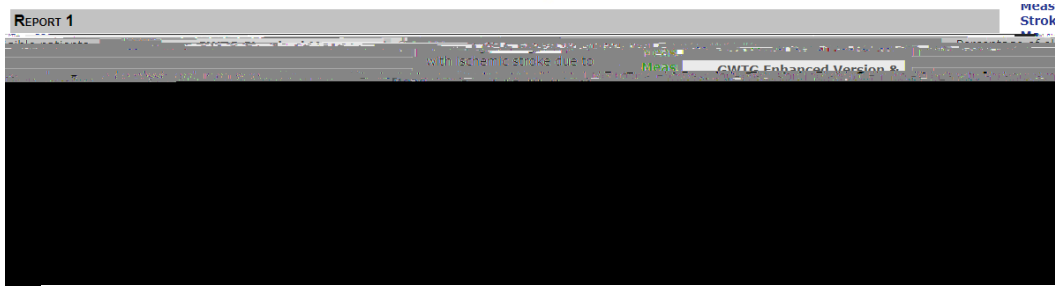
UPDATE MECHANICAL ENDOVASCULAR REPERFUSION THERA
FOR ELIGIBLE PATIENTS WITH ISCHEMIC STROKE MEASURE



Added:
Inclusion– M2
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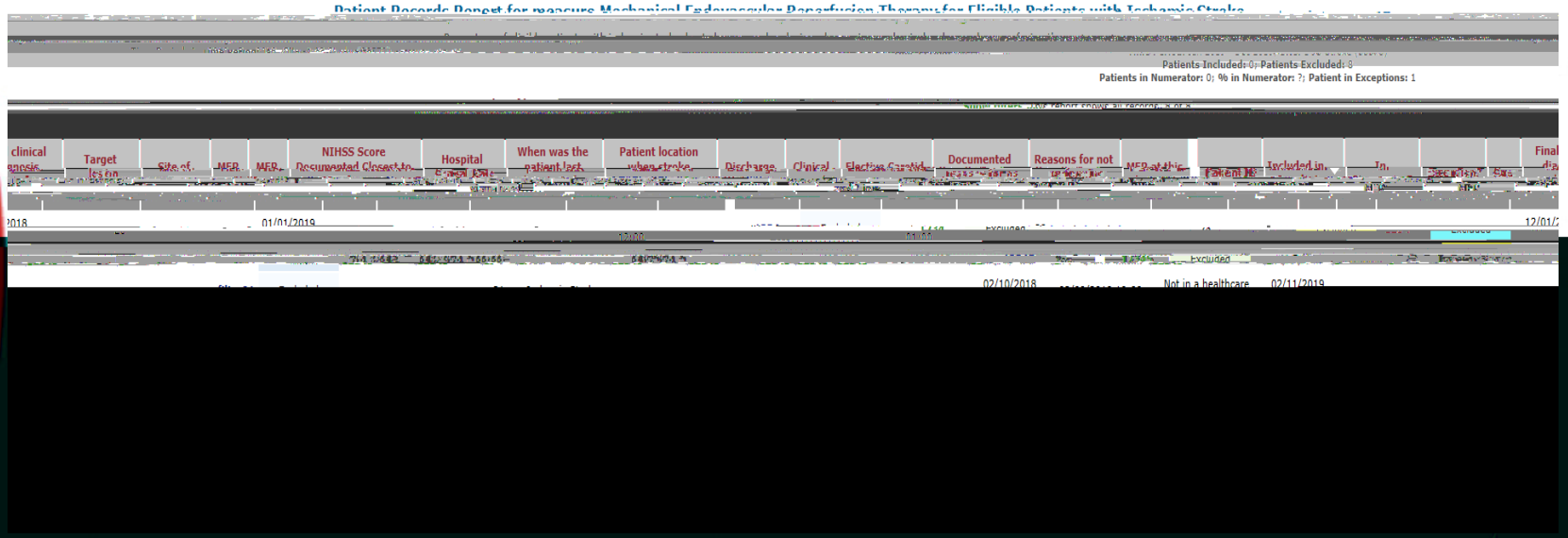

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TJC LAYERS

ADDED: ASHP AND ASHRP MEASURE GROUPS

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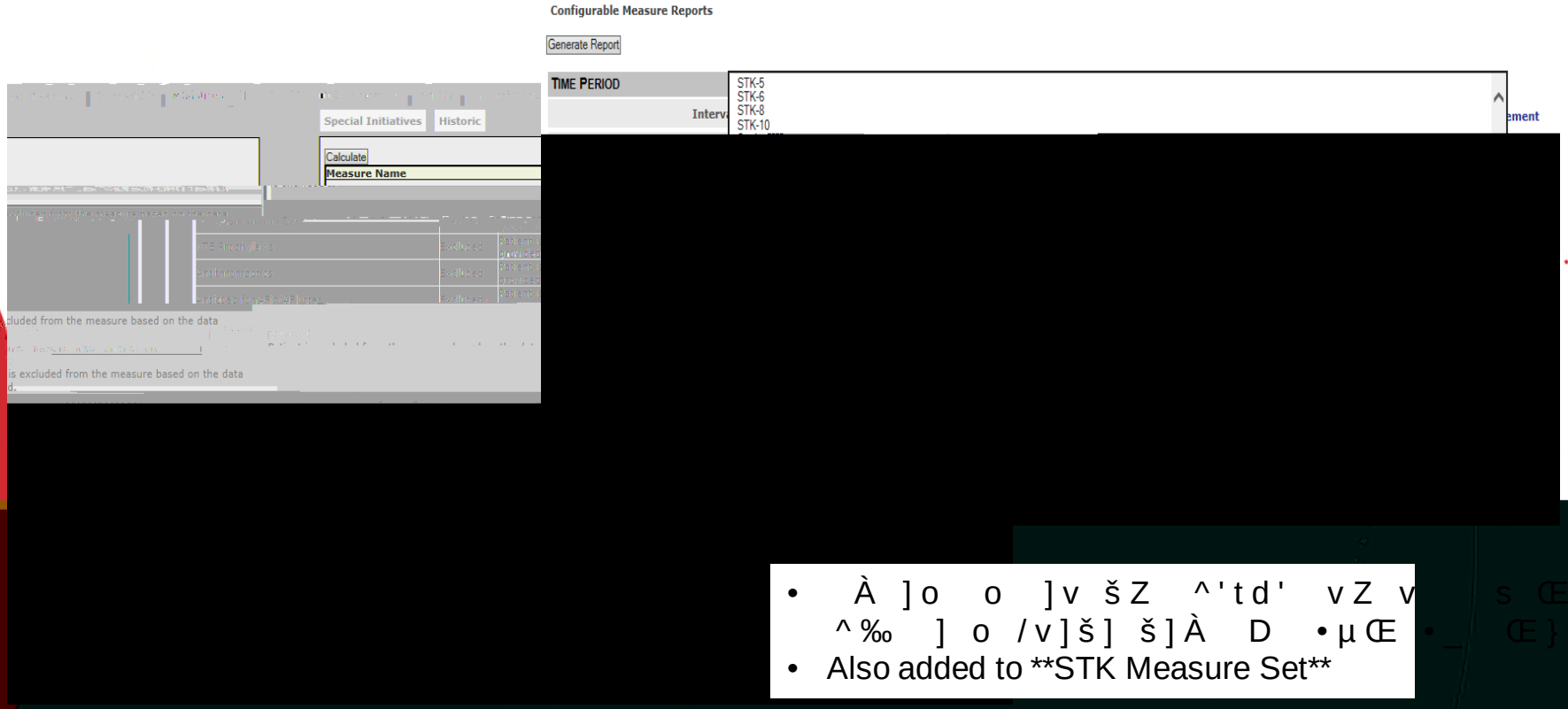
ADD CSTK01 REPORT TO STK LAYER



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- Also added to **STK Measure Set**

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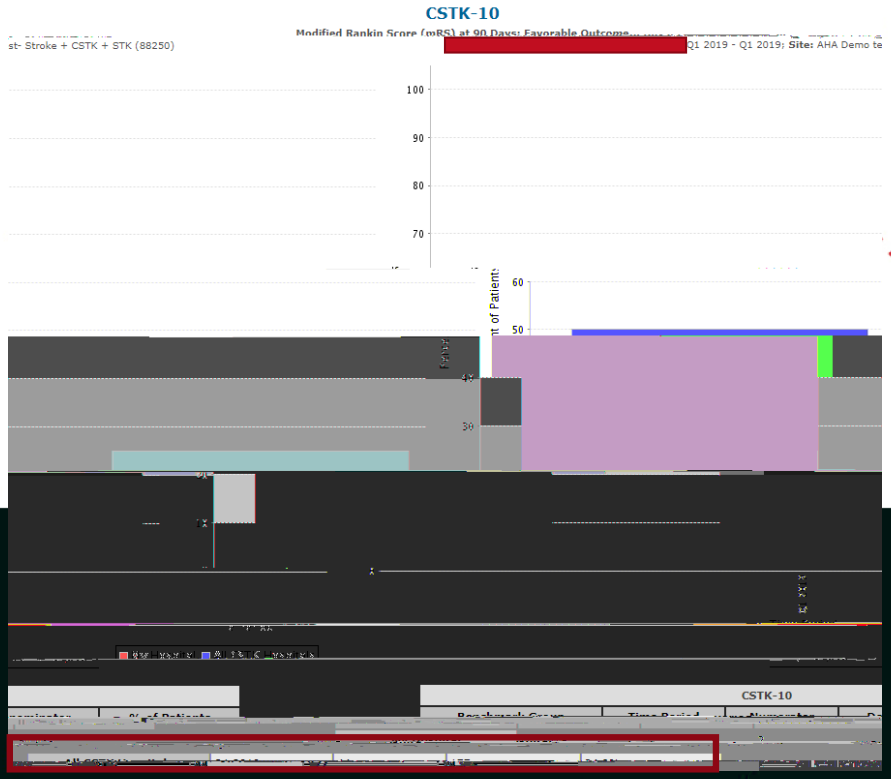
FIXED “ALL CSTK HOSPITALS” BENCHMARK ERROR

Zero cases reporting in Ze updae:



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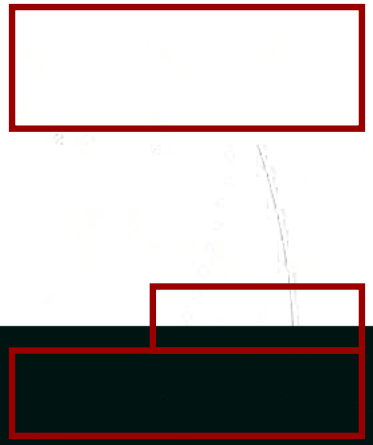
NEW FILTER OPTIONS



ADDITIONAL ITEMS

- UPDATE USER INACTIVITY TIMEOUT TO 15 MINUTES FOR PMT (ALL)
- UPDATED – CHANGED “TPA” TO “ALTEPLASE IN ALL TJC AND GWTG MEASURES
- REPAIRED – DISPLAY OPTION, ACHIEVEMENT GOAL MISSING FOR ACHIEVEMENT MEASURE "STATIN PRESCRIBED AT DISCHARGE“
- REPAIRED - PRE-DEFINED CONSENSUS MEASURE ERROR REPORTED BY USERS

QUESTIONS