Northern Virginia Emergency Medical Services Council

Regional Stroke Committee Meeting
Tuesday, January 24, 2023
10:00 am

Held via Zoom

Those present were:

15713494046	
Ali Eastridge-IAH Stroke Coord	alison.pinch@inova.com
Andrea Helmbach	alyochem@sentara.com
Brian Orndoff	borndoff@gmail.com
Craig French	craig.french@inova.org
Dani Nielsen	danielle.nielsen@inova.org
Jackie Leutbecker	jacqueline.leutbecker@inova.org
John Wanamaker	john.wanamaker@hcahealthcare.com
Kate Kramer-ACFD AOMD	kkramer@arlingtonva.us
Kate Passow-PTS	kate.passow@gmr.net
Laith Altaweel, MD	laith.altaweel@inova.org
Laura Vandegrift	laura@vaems.org
Margaret Probst	margaret@vaems.org
Michelle Ludeman	michelle@vaems.org
Philippa Durham	philippa.durham@fairfaxcounty.gov
Rachel Bugin	
Ray Whatley	ray@vaems.org
Rosemary Livingston-Olds	rosemary.livingstonolds@hcahealthcare.com
Sairah Bashir	sairah.bashir@inova.org
Scott Weir	scott.weir@inova.org
Seajin Yi	seajin.yi@inova.org
Shelby Magyar	vzp8kb@uvahealth.org
Steve Kling	steven.kling@inova.org
Tawny Jackson	tawny.jackson@heart.org

The meeting was started at 10:03 am by Dr. Laith Altaweel

WORKGROUP CHAIRS

- Lt. Alex Stephenson, Prince William County Fire & Rescue
- Laith Altaweel, MD from Inova

APPROVAL OF MINUTES

Minutes for the November 22, 2022 meeting were sent via email before the meeting for review and approval

- Motion to approve minutes as written with no changes
  - Jackie Leutbecker made the motion
    - ***The minutes were approved unanimously***

AHA UPDATE

Tawny Jackson gave the following update

- ISC is coming up the first week of February in Dallas
  - If you are attending in person, Tawny has award recognition dinner invitations and you can reach out to her to get those if you don't have them and are interested in attending
- GWTG stroke switched to the new platform earlier this month and there has been a slight learning curve for everyone but they're working through it well
  - Thank you to everyone for their patience with the new platform
- They are near the annual recognition award timeframe so she is requesting everyone put their data in for review of the annual award recognitions
- There was an EMS recognition webinar on January 10th.
  - Any agencies with questions about Mission: Lifeline annual recognition, reach out to Tawny
    - This is a one-time application, self-reported and they'll evaluate to determine if eligible for the annual recognition

STROKE SMART UPDATE

Margaret Probst provided a presentation. A copy is at the end of these minutes

CASE STUDY PRESENTATION

Dr. Altaweel and Jackie Leutbecker from Inova Fairfax presented a case on a 67-year-old female. A copy of the presentation can be found at the end of these minutes.

QUARTERLY DATA REVIEW

Regional data provided by Margaret

Third Quarter 2022 Regional Stroke Data

Data was requested from 10 stroke coordinators overseeing 13 facilities: Alexandria, Ashburn/Cornwall/Loudoun, Fairfax, Fair Oaks, Mt. Vernon, Reston/Tysons, Sentara, Stone Springs, UVA Prince William, VHC.

1) **Median Door to tPA/TNK: 43 minutes**

The value is comprised of data reported from 9 stroke coordinators from 12 facilities: Alexandria, Ashburn/Cornwall/Loudoun, Fairfax, Fair Oaks, Mount Vernon, Reston/Tysons, Sentara, StoneSprings,

and UVA Prince William.

2) **Median Door to Puncture: 76 minutes**
Data from Alexandria, Fairfax, and Reston.

3) Median DIDO time for Transfers: 124 minutes
Data were reported from 6 stroke coordinators regarding 8 facilities: Ashburn/Cornwall/Loudoun, Fair Oaks, Mount Vernon, Sentara, StoneSprings, and UVA Prince William.

EMS AGENCY AND HOSPITAL DATA

- The AHA can

REGIONAL ROUNDTABLE

- Inova is changing to Tenecteplase and asked about updating the Post-IV Alteplase form that the Council has in place currently
    - It seems most of the region is also going to Tenecteplase so it may be a better idea to move Alteplase to the background and have the form centered around Tenecteplase
    - Dr. Altaweel and Jackie Leutbecker will work on modifications for the form, send to the Council for distribution and hopefully we can review and approve it at our next meeting
- Dr. Altaweel asked about EMS and LVO stroke scales and transport considerations
    - Craig French advised that there wasn't much interest from departments in changing how they currently assess for LVOs
    - Brian Orndoff advised the agencies all do things differently and are not interested in going to a single, uniform scale, they do, however, use that scale to determine transport destination
        - In the City of Fairfax, if they find the patient is LVO positive, it engages action at the hospital and results in better outcomes
    - Kate Kramer from ACFD advised VHC has different levels of stroke alerts that they call based on their pre-alert and they always clear the CT and they go direct to CT when they pre-alert but depending n what they call in they either alert just the stroke team or the IR/Neuro team, so it's just a heads up but not always considered an activation
    - Craig French asked the hospitals whether the EMS agencies separate a stroke alert from an LVO alert.
        - Ray Whatley suggested he come to the Medical PI meeting and he may have better feedback on that question

Presentation for next meeting:

- Seeking a volunteer to present a case study for the next meeting in April.

UPCOMING MEETING DATES:

- April 25, 2023 - 10:00 AM
- July 25, 2023 - 10:00 AM
- October 24, 2023 - 10:00 AM

The meeting was adjourned at 11:28 am.

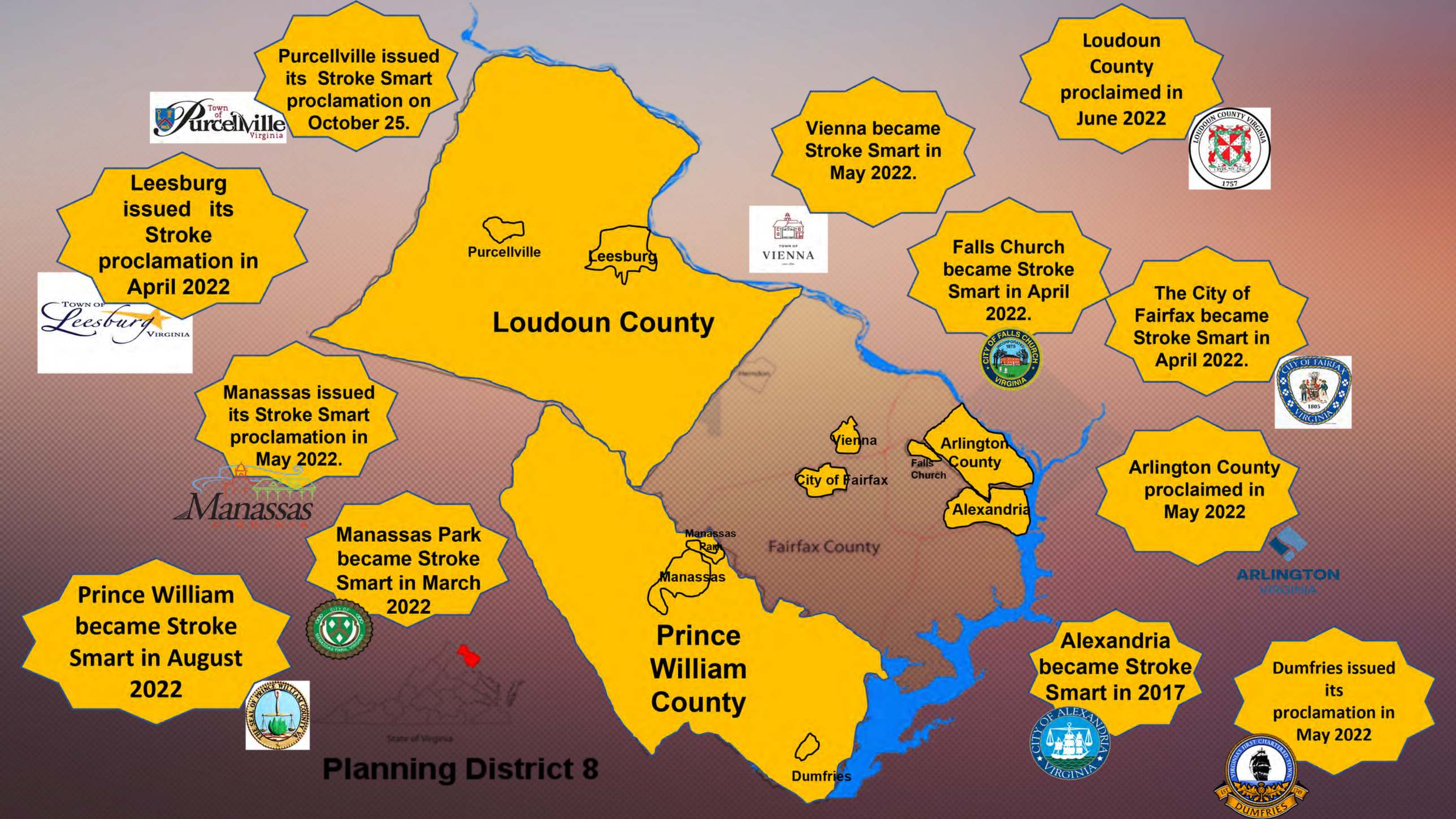
CERTIFICATION OF THE REGIONAL STROKE COMMITTEE MEETING

Northern Virginia EMS Council, Inc
7250 Heritage Village Plaza, Suite 102
Gainesville, VA 20155

I, Laura Vandegrift of the Northern Virginia EMS Council certify that the above minutes are a true and correct transcript of the meeting minutes of the Regional Stroke Committee held on January 24, 2022. The minutes were officially approved on April 25, 2023.

Laura Vandegrift *04/25/2023*

Laura Vandegrift Date


Purcellville issued its Stroke Smart proclamation on October 25.
Leesburg issued its Stroke proclamation in April 2022
Vienna became Stroke Smart in May 2022.
Loudoun County proclaimed in June 2022
Falls Church became Stroke Smart in April 2022.
The City of Fairfax became Stroke Smart in April 2022.
Manassas issued its Stroke Smart proclamation in May 2022.
Arlington County proclaimed in May 2022
Manassas Park became Stroke Smart in March 2022
Prince William became Stroke Smart in August 2022
Alexandria became Stroke Smart in 2017
Dumfries issued its proclamation in May 2022
Purcellville
Leesburg
Loudoun County
Vienna
City of Fairfax
Falls Church
Arlington County
Alexandria
Manassas Park
Manassas
Fairfax County
Prince William County
Dumfries
Planning District 8

Stroke Smart Training Sessions

Alexandria, Fairfax, Arlington (Annapolis, Anne Arundel, Mt. Ranier from CERT Con)

your Library
Fairfax County Public
Imagine • Discover • Connect

LANSDOWNE WOODS of Virginia

PRINCE WILLIAM CHAMBER OF COMMERCE

Stroke Smart Metric	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Proclamations Issued	1	8	1	1	**11 of 13**
Trainers Instructed	160	302	657	700	**1819**
Supplies Directly Distributed	1842	3035	7585	23340	**35802**
Known Student Ordered Supplies	2625	12375	17450	22250	**54700**
Known Training Video Views	N/A	598	956	343	**1897**

Another 28,000 were sent in the first two weeks of 2023

Stroke Smart Schools

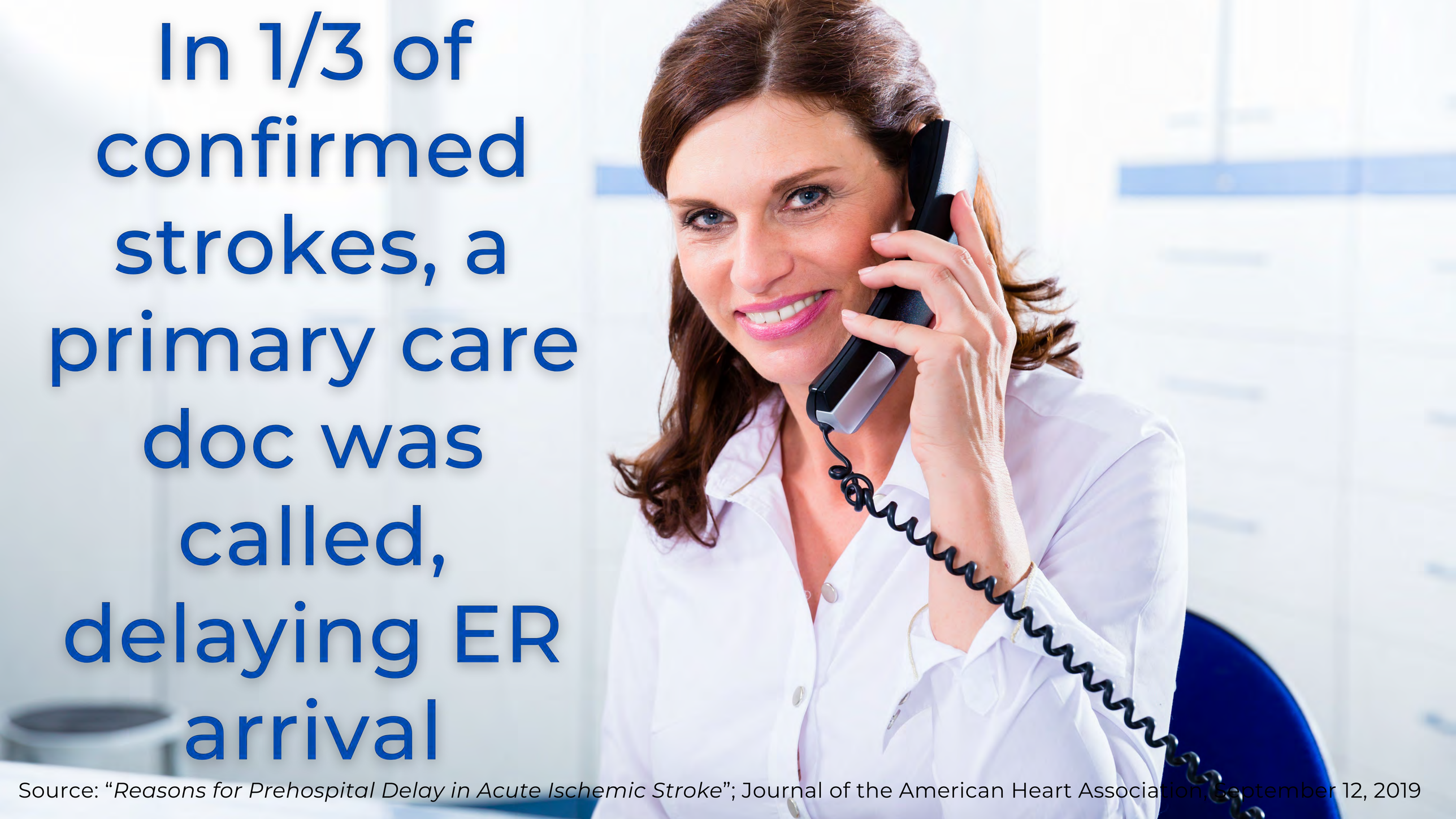
-Manassas City
-Prince William
-Alexandria (non-teaching staff too!)

Next Focus Area:
Medical Practices & Primary Care Physicians


Best Practice
VSSTF
Virginia Stroke Systems Task Force
MSV℠ MEDICAL SOCIETY OF VIRGINIA
Stroke Smart VIRGINIA
VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia

1. Patients tend to trust their doctors
2. Majority see a medical professional annually
3. Open to receiving medical guidance
4. Focused attention

In 1/3 of confirmed strokes, a primary care doc was called, delaying ER arrival



Source: "*Reasons for Prehospital Delay in Acute Ischemic Stroke*"; Journal of the American Heart Association, September 12, 2019

Stroke Smart Medical Practices

1. Train office staff to spot strokes and follow the practice protocol

2. Update voicemail with stroke signs and instruct to call 911 *(if practial)*
    - when office is closed
    - when lines are busy

Stroke Smart Medical Practices

3. Present all patients Stroke Smart information:

- wallet cards & magnets
- PSA video on waiting area screens, telehealth holds,
- Stroke Smart information on practice website, newsletters

Stroke Smart Medical Practices

4. Educate high risk stroke patients (exam room)

- walk through Stroke Smart education
- stress importance of calling 911
- hand memory aids and encourage sharing with loved ones

Developing Certification

- quantity of material distributed
- amount of high-risk patients educated
- number of staff trained

Pilot Programs Underway!

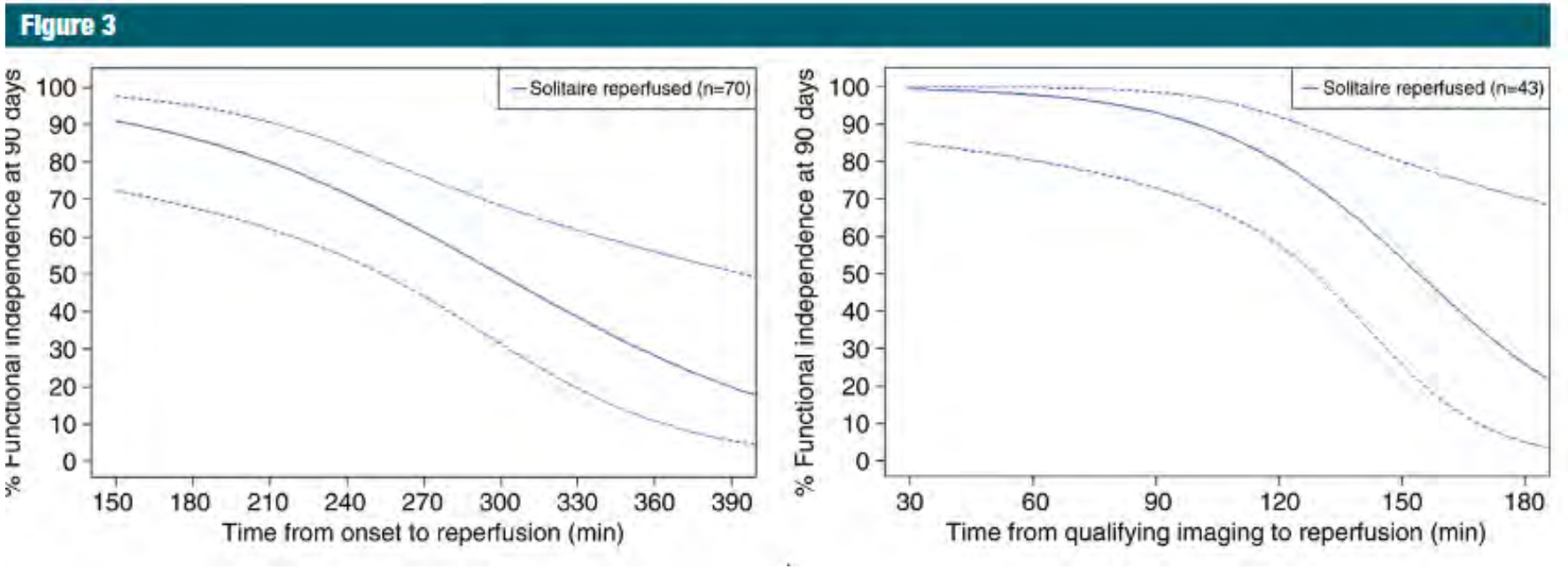
Case Presentation: Stroke Presenting as Trauma – Challenges and Opportunities

Jacqueline Leutbecker, BSN, RN, SCRN

Laith Altaweel, MD

Case Presentation

- 67 yo Female with pmh significant for aortic valve replacement (on ASA)and HTN , who presented to ILH with syncope



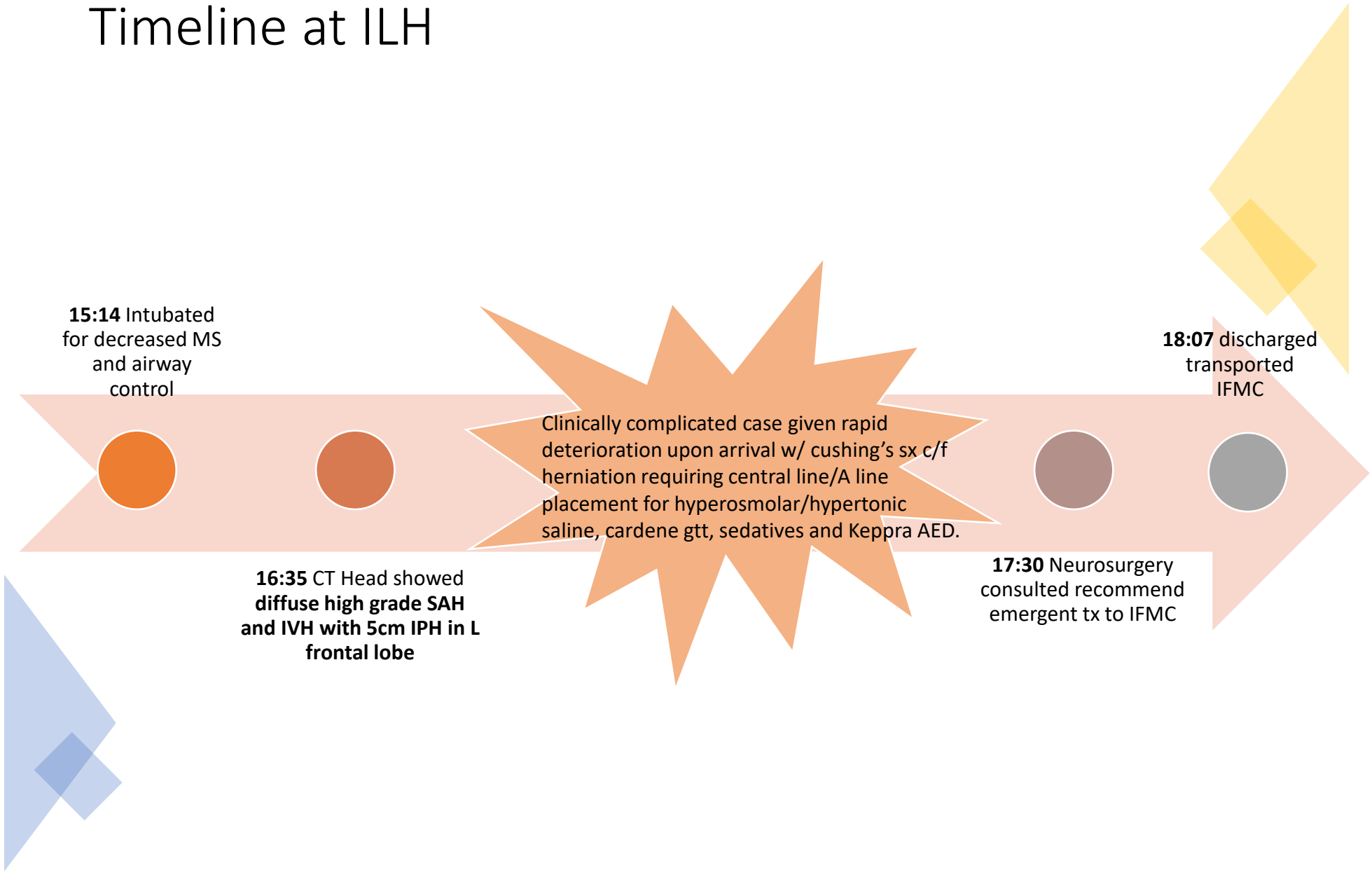
Pre-Hospital

14:26 EMS dispatched, x3 EMS arrived at scene
> AA 625 / TL 618 arrived First
> M615C assumed care after arrival

14:34 EMS' arrived at scene. Family reported sudden onset of unresponsiveness, witnessed. No confirmation of major external trauma from unresponsiveness/collapsing. Not responsive to Narcan. Had multiple projectile emesis, able to maintain airway w/ supplemental O2 via NC en route. Blood sugar 129. No known anticoagulant use. BP 198/132.

15:01 Patient Arrived at ILH as trauma

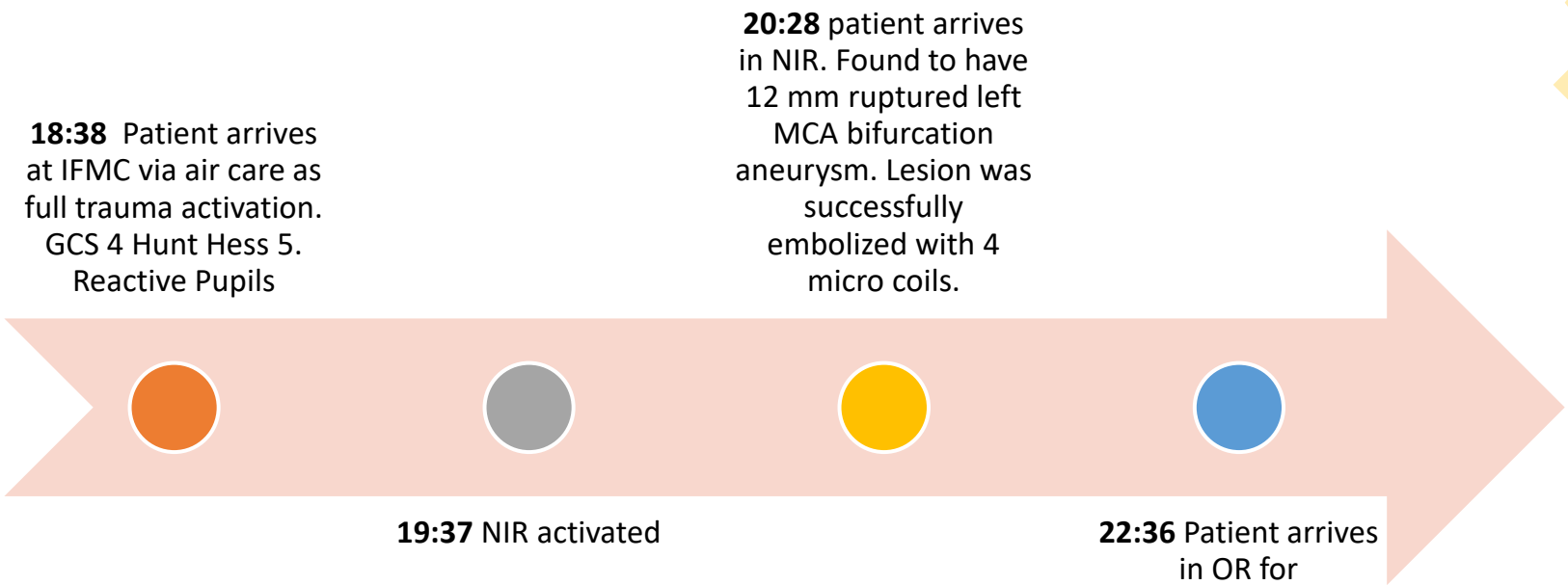
Timeline at ILH

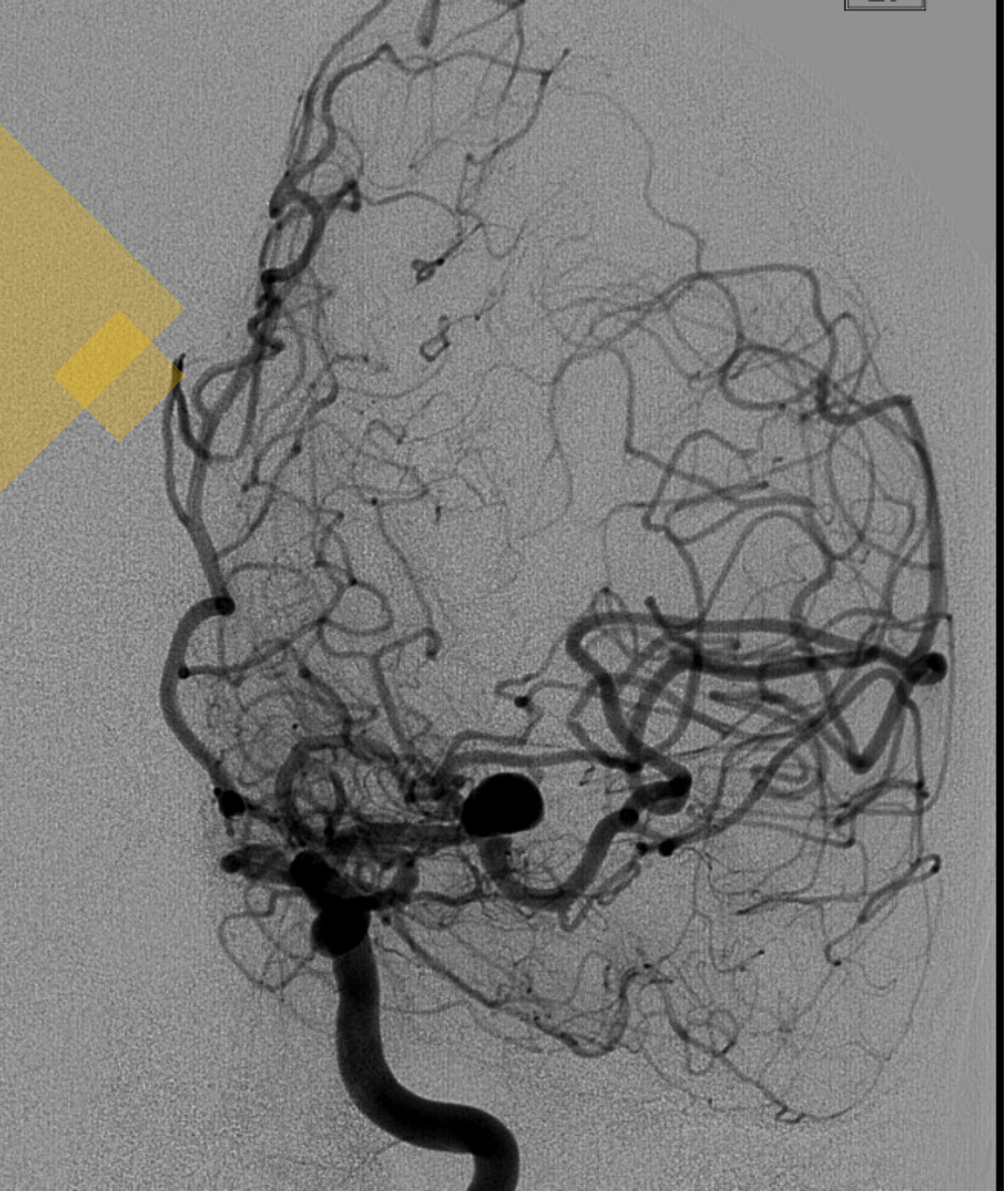


- FAST exam – negative for trauma
- Initial labs(significant): plt count & coags wnl; wbc 19; Glucose 166.
- After intubation and CT head, pupils noted to be nonreactive, with bradycardia and hypertension noted- 23.4%NaCl (after placement of a femoral TLC) and mannitol given due to concern for cerebral herniation
- Nicardipine infusion initiated for BP control, goal sbp :90-140
- Sedated with propofol infusion
- Flown to IFH due to NCCT findings

Admitting NCCT and CTA head 1/5.

Timeline IFMC





IFH

- ON propofol - pupils reactive.
- Underwent DSA with aneurysm coiling

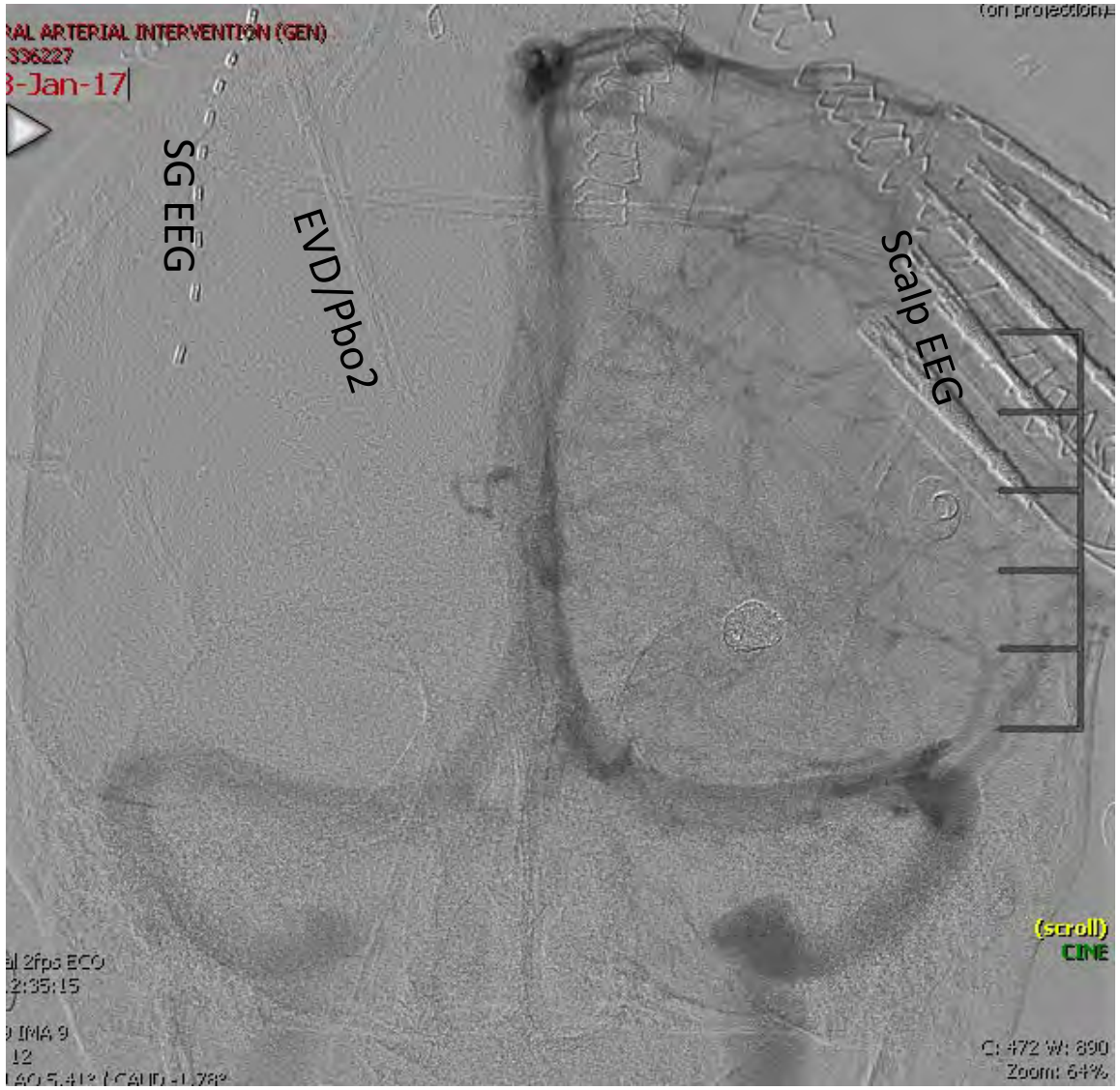
Decompressive hemicraniectomy

Hospital Day 2

- Parieto-occipital stroke(related to herniation0
- EVD and PbtO2 and SG
- Worsening midline shift
- Parieto-occipital stroke(related to herniation0

Hospital Course

- Complicated by ICP crisis and delayed cerebral ischemia and ICP crisis
  - Multimodal monitoring
- Eventually opened eyes, not following commands and moving lt side
- Tracheostomy and PEG



Multimodality Monitoring

"Found Down" Patient

- Discovered unresponsive with no clear etiology
- Poses challenges for pre-hospital and ED providers

- 201 patient who were "found down" - retrospective study
- 80% initially assessed by medical team
- Of the patients presenting as trauma alerts:
  - 2% had CVA

- Kornblith et al. J Trauma Acute Care Surg. 2013

"Found Down" Patient

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- 80% initially assessed by medical team
- Of the patients presetning as trauam alerts:
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  - Subastance abuse very common

- Kornblith et al. J Trauma Acute Care Surg. 2013

"Found Down" Patient – Silent Injury and mistriage

- Multicenter trauma study of 661 "found down" patients
- 35% had injuries identified in the field; but in ED 56% had traumatic injuries
- 50% had combined medical diagnosis and a traumatic iniurv
- Initial activation type:
  - 67% medical
    - 30% had medical diagnosis and injury
  - 33% trauma
    - 70% had medical diagnosis and injury
  - Mistriage common, esp in elderly population

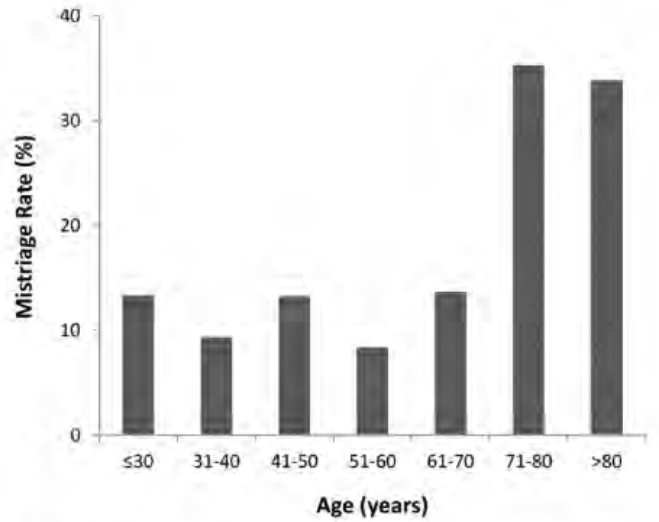


Figure 1. Mistriage rate by age group

Howard et al. J Trauma Acute Care Surg. 2015

"Found Down" Patient – Neurologic Emergency

- Single center trauma study of >1000 "found down" patients
- Prevalence of neurologic emergency (AIS, ICH, SAH, SE): 116cases (1.2%)

Table 1. Characteristics of Patients with Neurologic Emergencies Presenting as Trauma Activations

	n	Mean Age, y	Male	Mean GCS Score	Intubated, n (%)	Survival, n (%)
Acute ischemic stroke	52	74.4	56%	11	17 (33)	41 (79)
Intracerebral hemorrhage	39	71.5	56%	10	20 (51)	26 (67)
Subarachnoid hemorrhage	15	63.2	67%	10	8 (53)	11 (73)
Status epilepticus	10	42.9	80%	10	5 (50)	10 (100)
All	116					

GCS = Glasgow Coma Scale.

Table 3. Comparison of Stroke Treatment Process Metrics for TTA and Non-TTA Stroke Patients

Median (IQR), Mean (SD)	All	Non-TTA	TTA	Comparison
Door to CT scan	28 (18–55), 158 (659)	28 (18–57), 168 (685)	23 (17–44), 37 (44)	0.16
Door to needle	58 (42–77), 69 (65)	57 (42–77), 69 (68)	60 (50–86), 65 (25)	0.6
Door to groin puncture	124 (105–154), 145 (93)	129 (105–155), 150 (100)	117 (100–130), 115 (21)	0.15

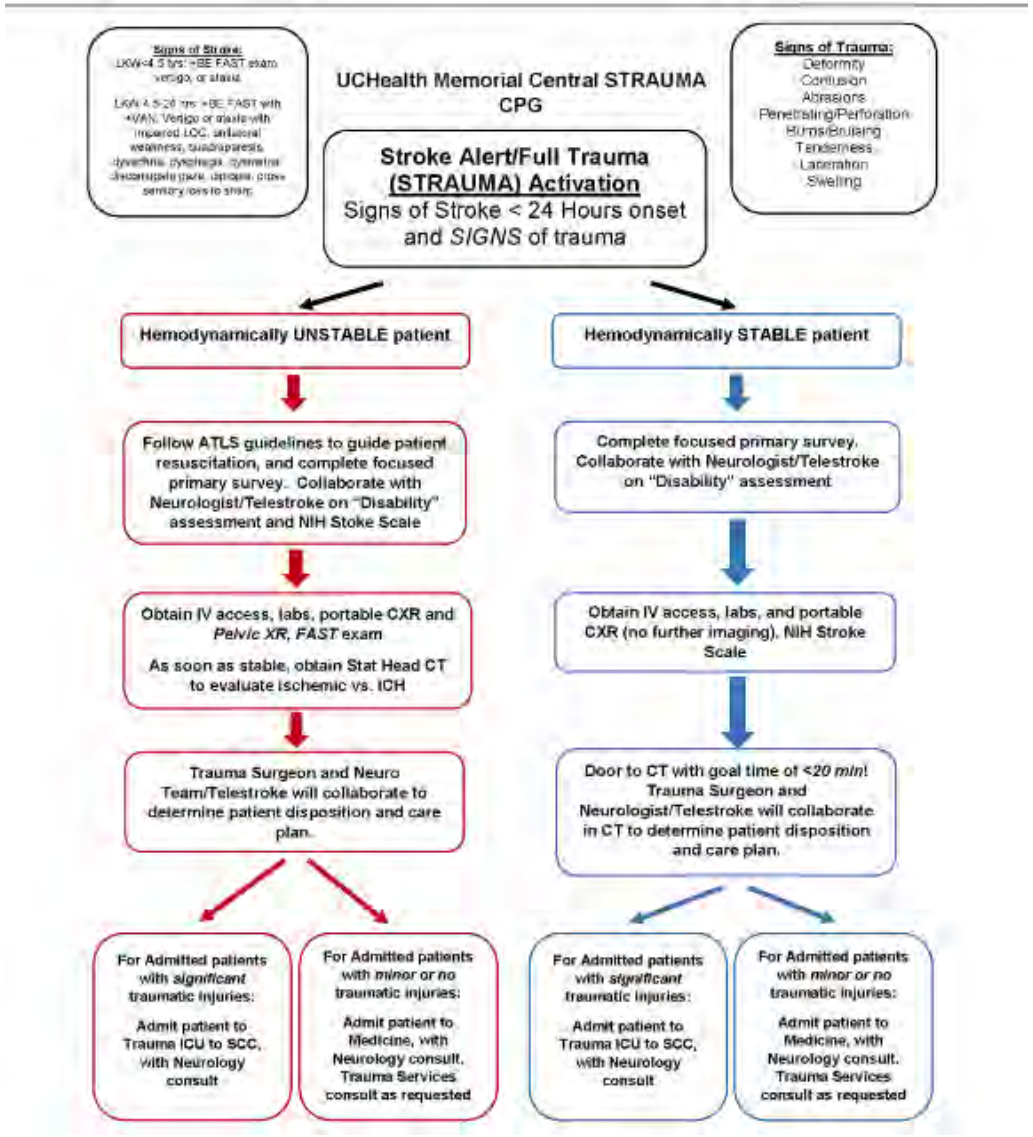
CT = computed tomography; IQR = interquartile ratio; SD = standard deviation; TTA = trauma team activation.

Madhok et al. Journal of EM. 2019

Limitations

- Single center
- Academic center
- Transfers not considered
- Prior to thrombectomy era
- Stroke alert activated by trauma team if stroke suspected
    - May not generalize to other sites who don't have such a culture

STRAUMA Alert—Simultaneous Trauma and Stroke Team Activations



Lee et all. The American Surgeon. 2020

Standard stroke alerts vs STRAUMA : Results

- Door to CT : 17 vs 23min
- TPA treatment rate: 36 vs 44% (P=NS)
- DTN : 40 vs 40min
- Rate of thrombectomy for dx CVA: 13 vs 27% (P=0.03)
- DGP: 73 vs 80 min (P=NS)
- Mortality in patients with diagnosis of stroke: 21 vs 4% (P=0.003)
    - Higher NIHSS, ISS score.

- Lee et all. The American Surgeon. 2020

Conclusions

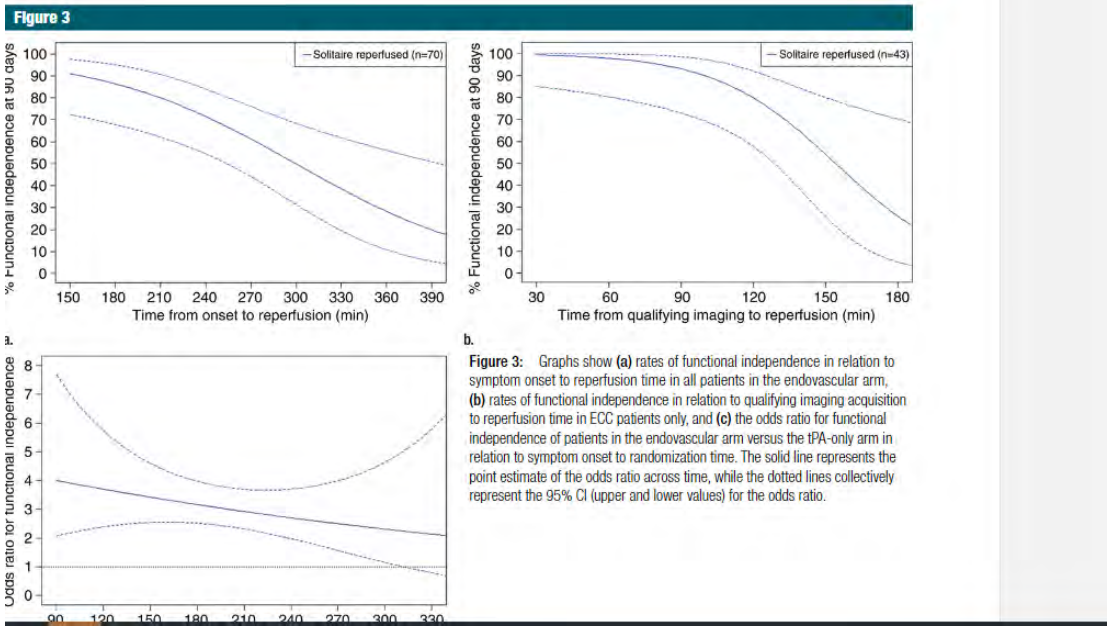


Figure 3: Graphs show **(a)** rates of functional independence in relation to symptom onset to reperfusion time in all patients in the endovascular arm, **(b)** rates of functional independence in relation to qualifying imaging acquisition to reperfusion time in ECC patients only, and **(c)** the odds ratio for functional independence of patients in the endovascular arm versus the tPA-only arm in relation to symptom onset to randomization time. The solid line represents the point estimate of the odds ratio across time, while the dotted lines collectively represent the 95% CI (upper and lower values) for the odds ratio.

- Neurological emergencies rarely present as trauma alerts
  - Tend to have to worse outcomes
- Prehospital recognition of stroke-likely symptoms important
- Efficient, multidisciplinary workflow essential to timely, effective treatment
- Special considerations:
  - Telestroke
  - Need for transfer to thrombectomy center
  - "Normal" NCCT and LVO work-up