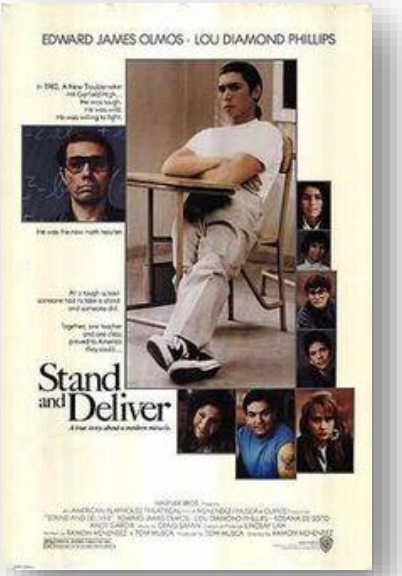

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STAND AND DELIVER: STANDARDIZATION OF TELEMEDICINE TRAINING FOR ACUTE STROKE CARE

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No Disclosures or Conflicts of Interest

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OVERVIEW

- History of Telestroke
- Telestroke Codes
- Approaches to Learning
- Simulations
- Telestroke Curriculum
- Summary

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Stroke
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association | American Stroke Association

"Telestroke": The Application of Telemedicine for Stroke

Steven R. Levine and Mark Gorman

Stroke. 1999;30:464-469
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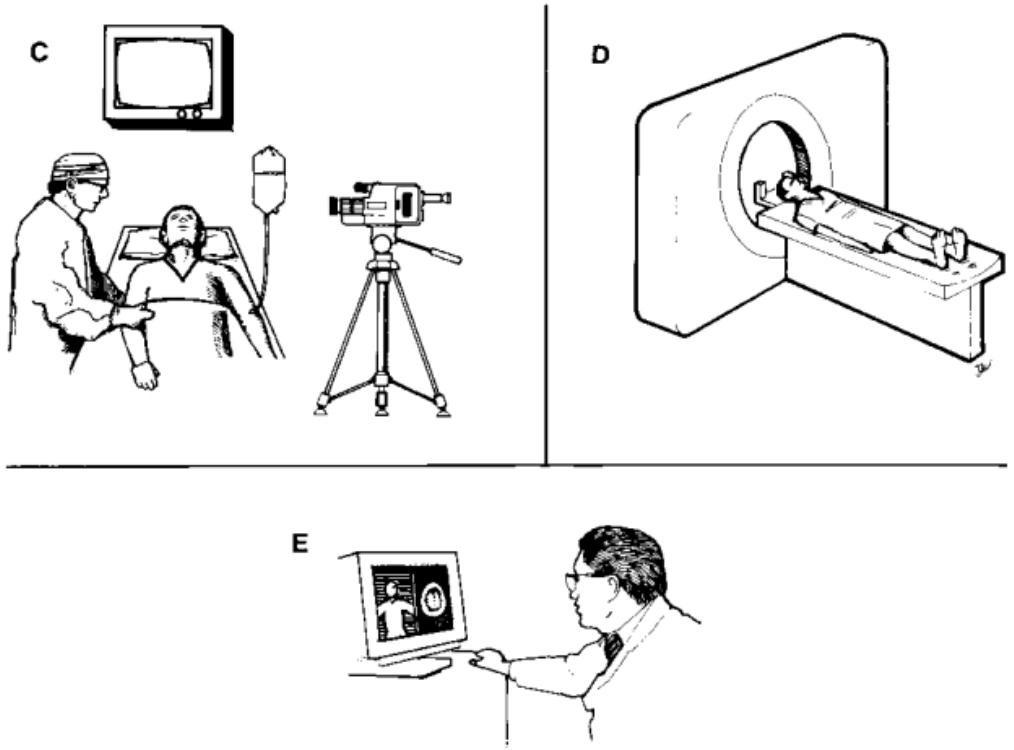

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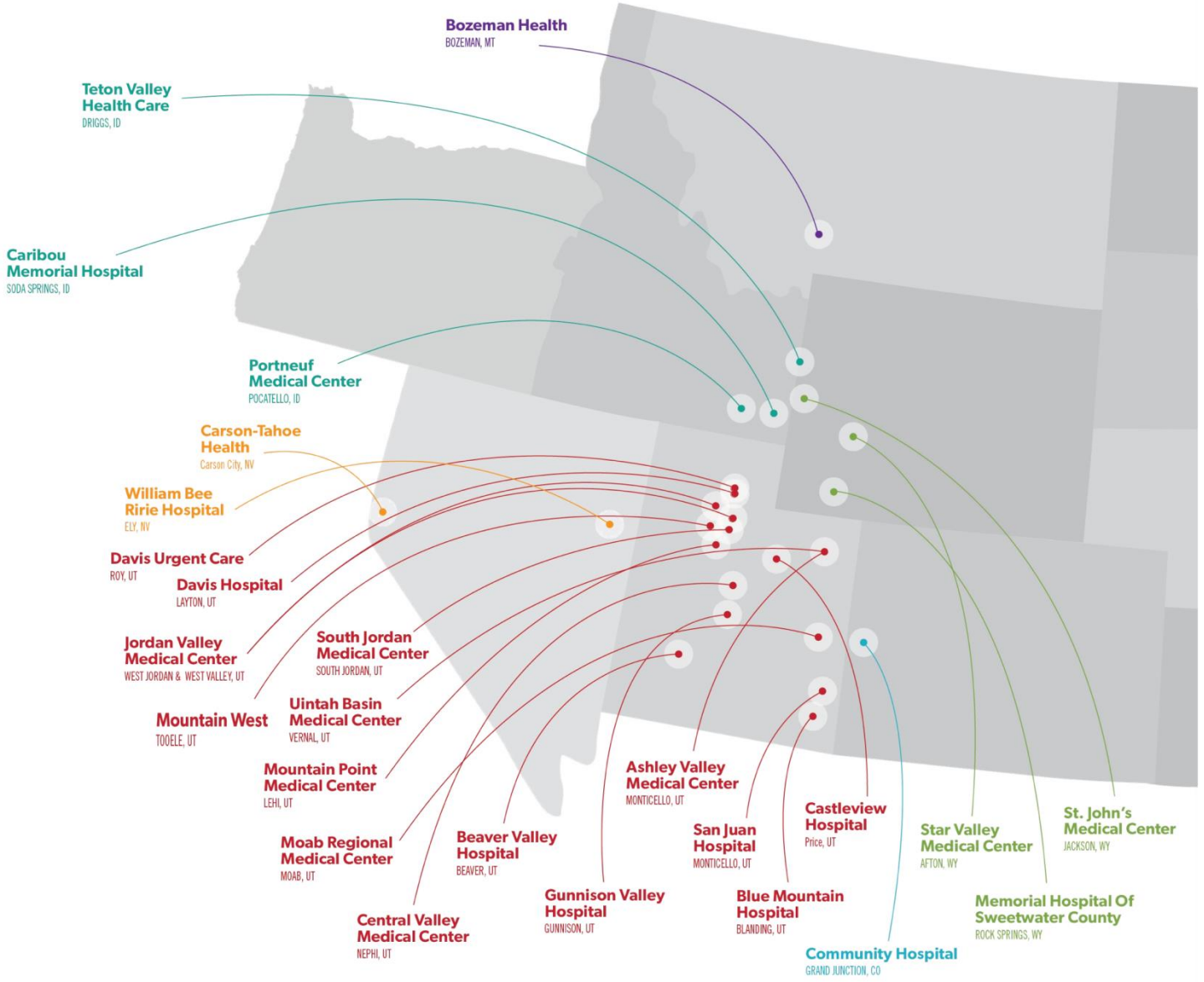

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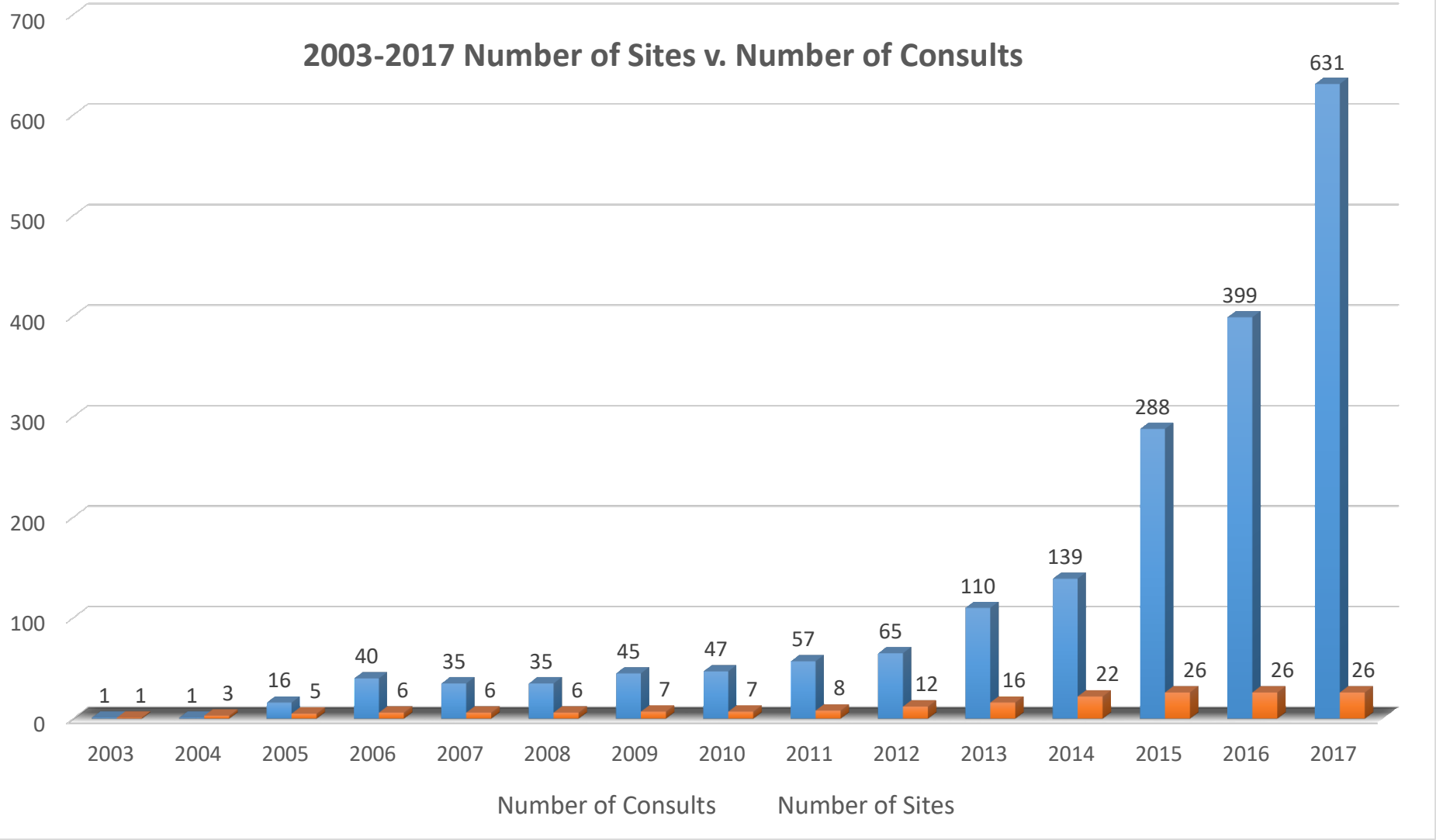
NON-LINEAR INCREASE IN TELESTROKE CONSULTS



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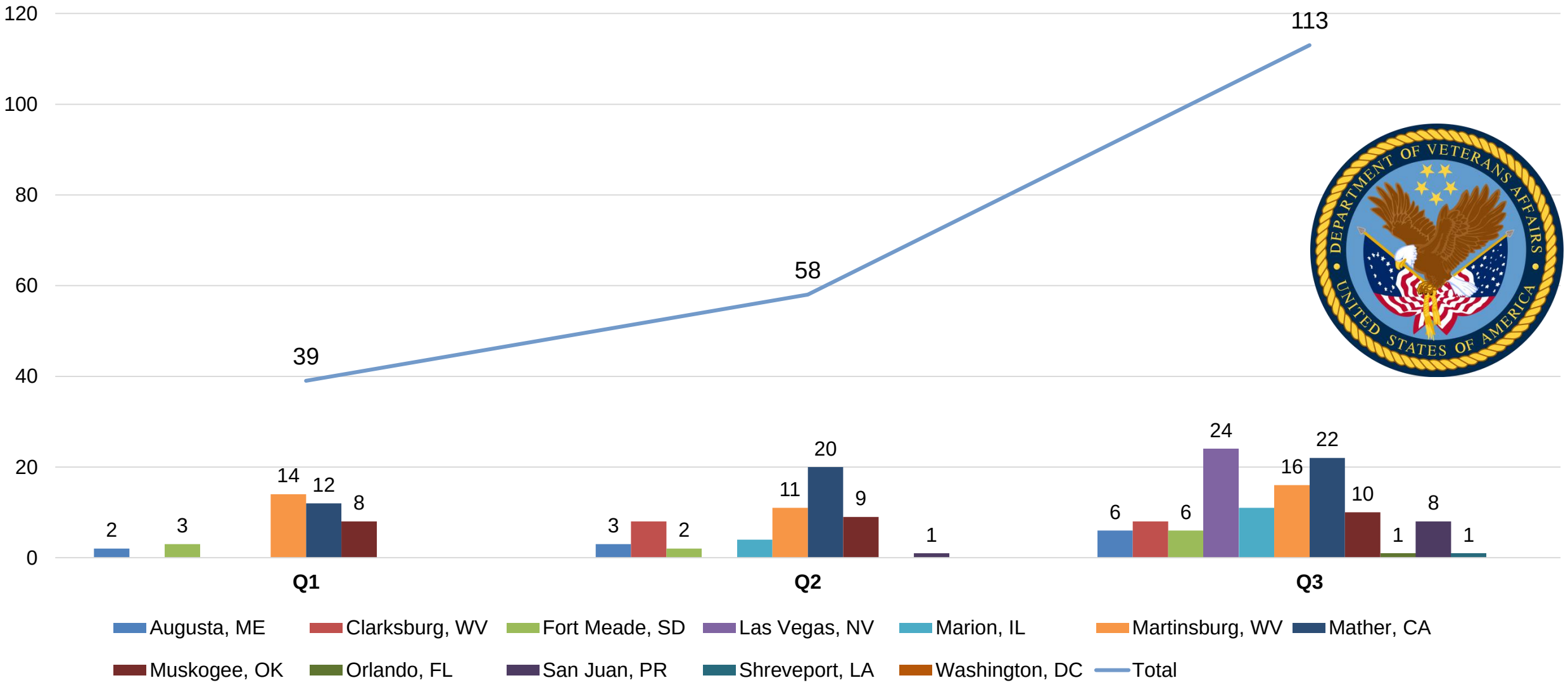
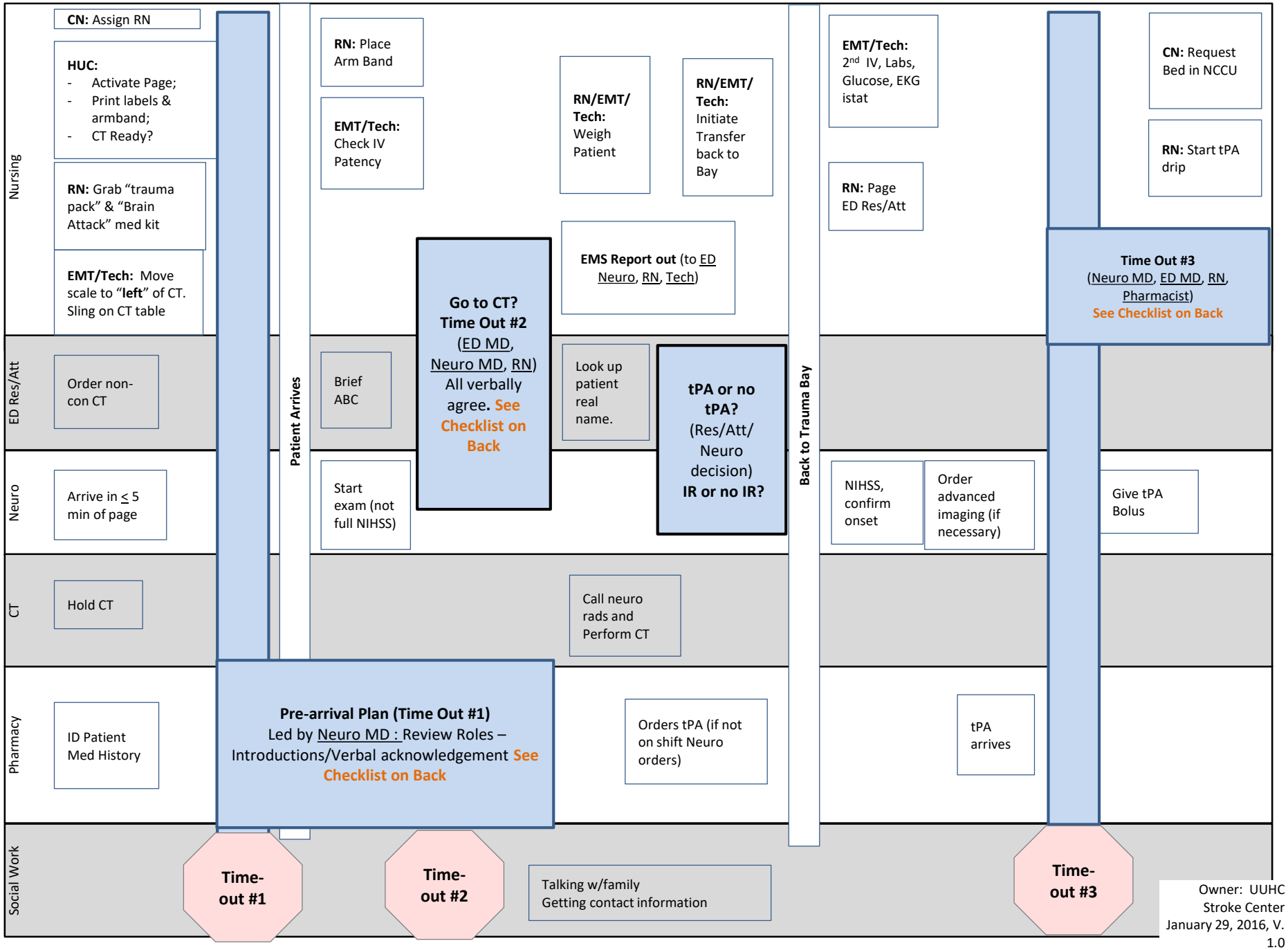
WORKLOAD: 210 TELESTROKE CONSULTS THROUGH Q3



Brain Attack - ED Expedited CT Protocol



Owner: UUHC Stroke Center
January 29, 2016, V. 1.0

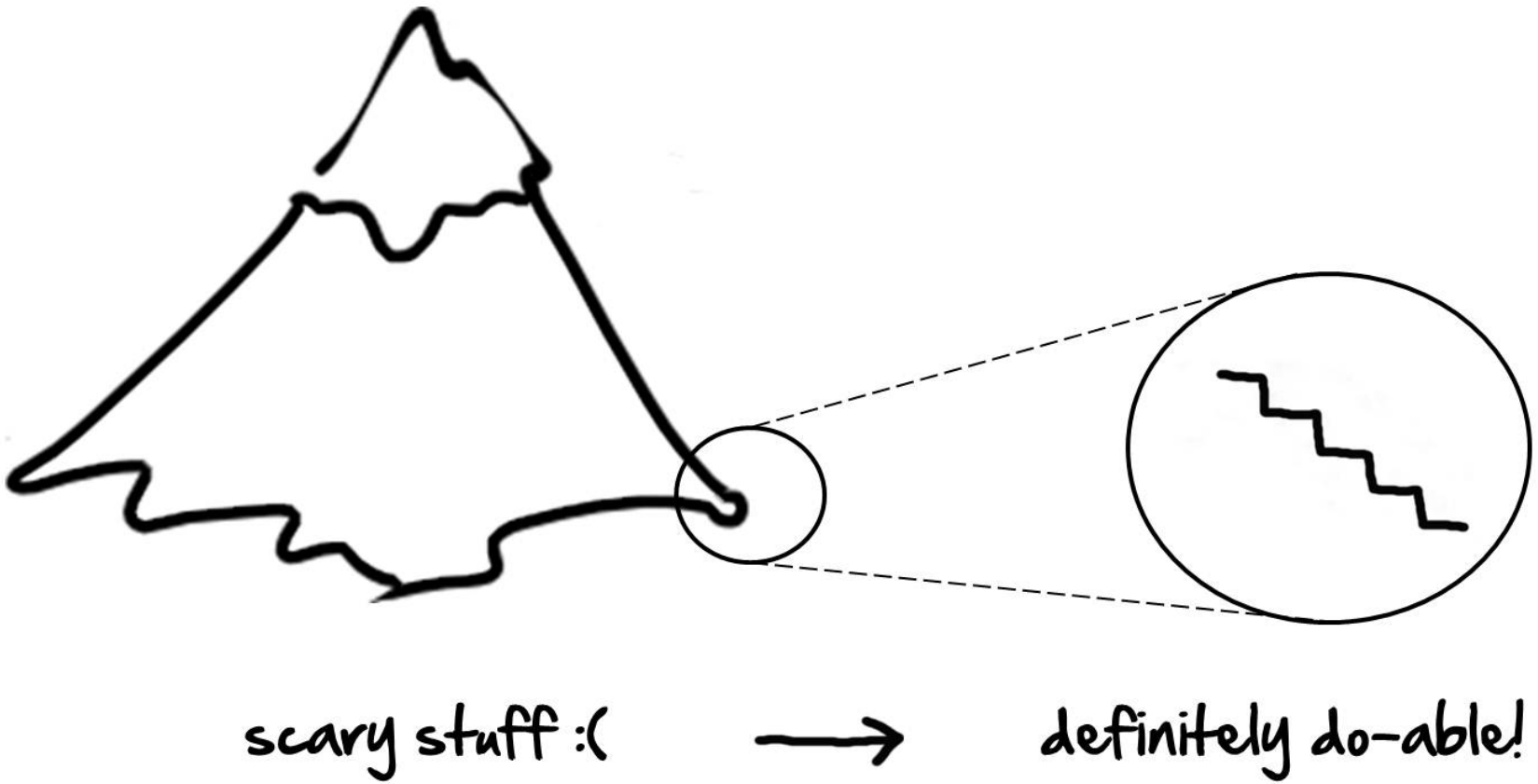
TELESTROKE: CHALLENGES

People Factors

- Many stakeholders
- Competing priorities
- Inexperience
- Communication
- Patient & Family
- Consent process

Systems Factors

- Time sensitive disease
- Complex disease
- Variation in resources
- Technology
- Disposition



think big, start small

© The Work Experiment 2011
sarah.theworkexperiment.com

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Table 3.2. National Institutes of Health Stroke Scale (maximum = 42)

Response	(Score)	Response	(Score)
Level of consciousness		Motor arm (left and right)	
alert	(0)	no drift	(0)
drowsy	(1)	drift before 10 seconds	(1)
stuporous	(2)	falls before 10 seconds	(2)
coma	(3)	no effort against gravity	(3)
		no movement	(4)
Response to level of consciousness questions*		Motor leg (left and right)	
answers both correctly	(0)	no drift	(0)
answers one correctly	(1)	drift before 5-10 seconds	(1)
answers neither correctly	(2)	falls before 5-10 seconds	(2)
		no effort against gravity	(3)
		no movement	(4)
Response to level of consciousness commands†		Ataxia	
obeys both correctly	(0)	absent	(0)
obeys one correctly	(1)	one limb	(1)
obeys neither	(2)	two limbs	(2)
Pupillary response		Sensory	
both reactive	(0)	normal	(0)
one reactive	(1)	mild	(1)
neither reactive	(2)	severe loss	(2)
Gaze		Language	
normal	(0)	normal	(0)
partial gaze palsy	(1)	mild aphasia	(1)
total gaze palsy	(2)	severe aphasia	(2)
		mute or global aphasia	(3)
Visual fields		Facial palsy	
no visual loss	(0)	normal	(0)
partial hemianopsia	(1)	minor paralysis	(1)
complete hemianopsia	(2)	partial paralysis	(2)
bilateral hemianopsia	(3)	complete paralysis	(3)
Dysarthria		Extinction/inattention	
normal	(0)	normal	(0)
mild	(1)	mild	(1)
severe	(2)	severe	(2)

* Level of consciousness questions: "How old are you?" "What month is this?"

† Level of consciousness commands: "Squeeze my hand" (using nonparetic hand), "Close your eyes."

<4 = Good prognosis -- No tPA 4-20 = mild to moderate - ideal tPA >20 = severe defiicit --No tPA

You know how.

Down to earth.

I got home from work.

Near the table in the dining room.

They heard him speak on the radio last night.

MAMA

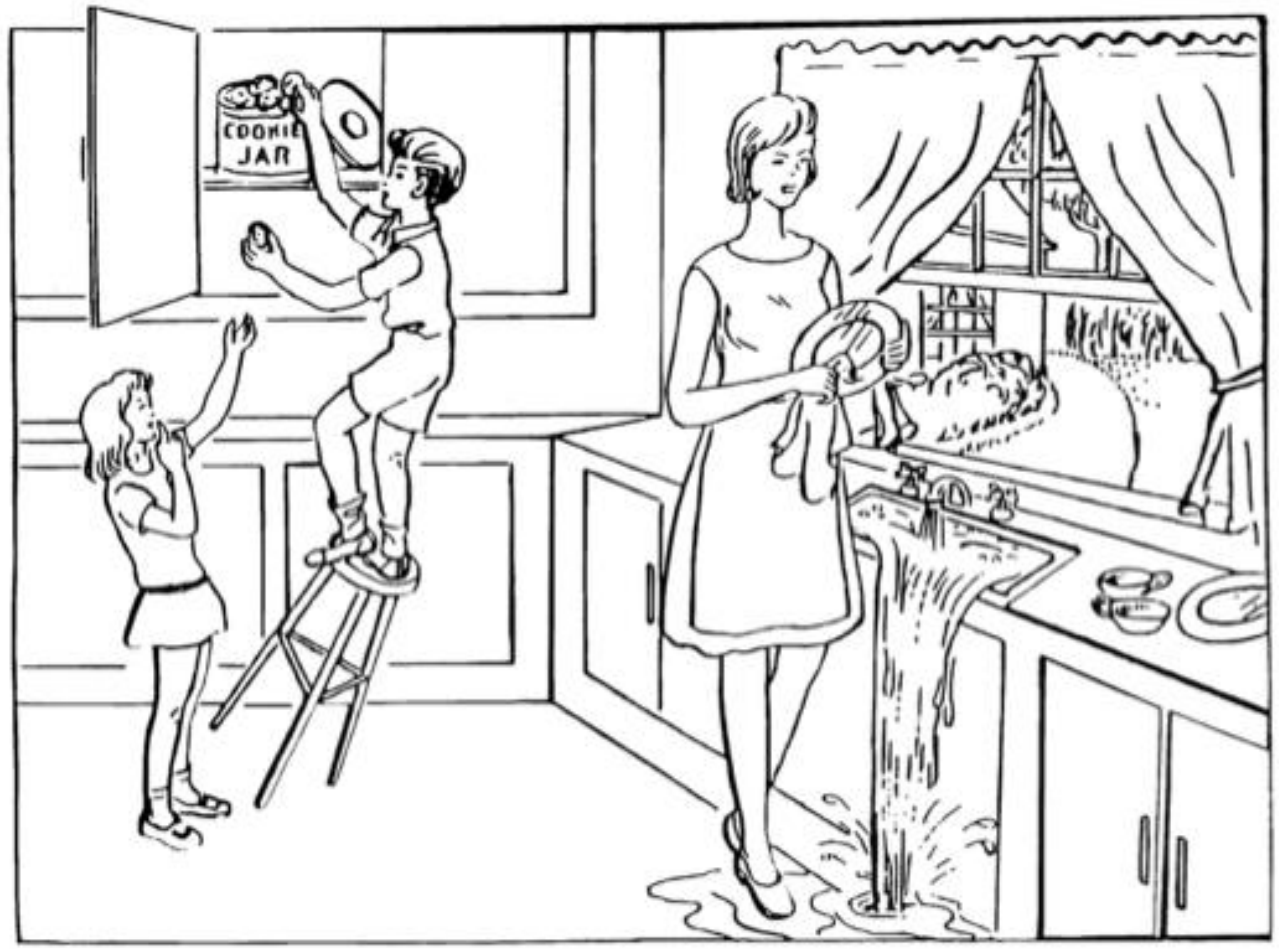
TIP – TOP

FIFTY – FIFTY

THANKS

HUCKLEBERRY

BASEBALL PLAYER


COOKIE
JAR

STROKE EXAM COMPONENTS

Observational

- Mental Status
- Language
- Extraocular movements
- Facial Symmetry
- Dysarthria
- Motor Drift
- Coordination
- Gait*

Interactional

- Visual Fields
- Strength
- Sensation
- Neglect
- Reflexes*

NIH Stroke Scale Tips and Tricks for TeleStroke

TeleMedicine Department

‹ PREV NEXT ›

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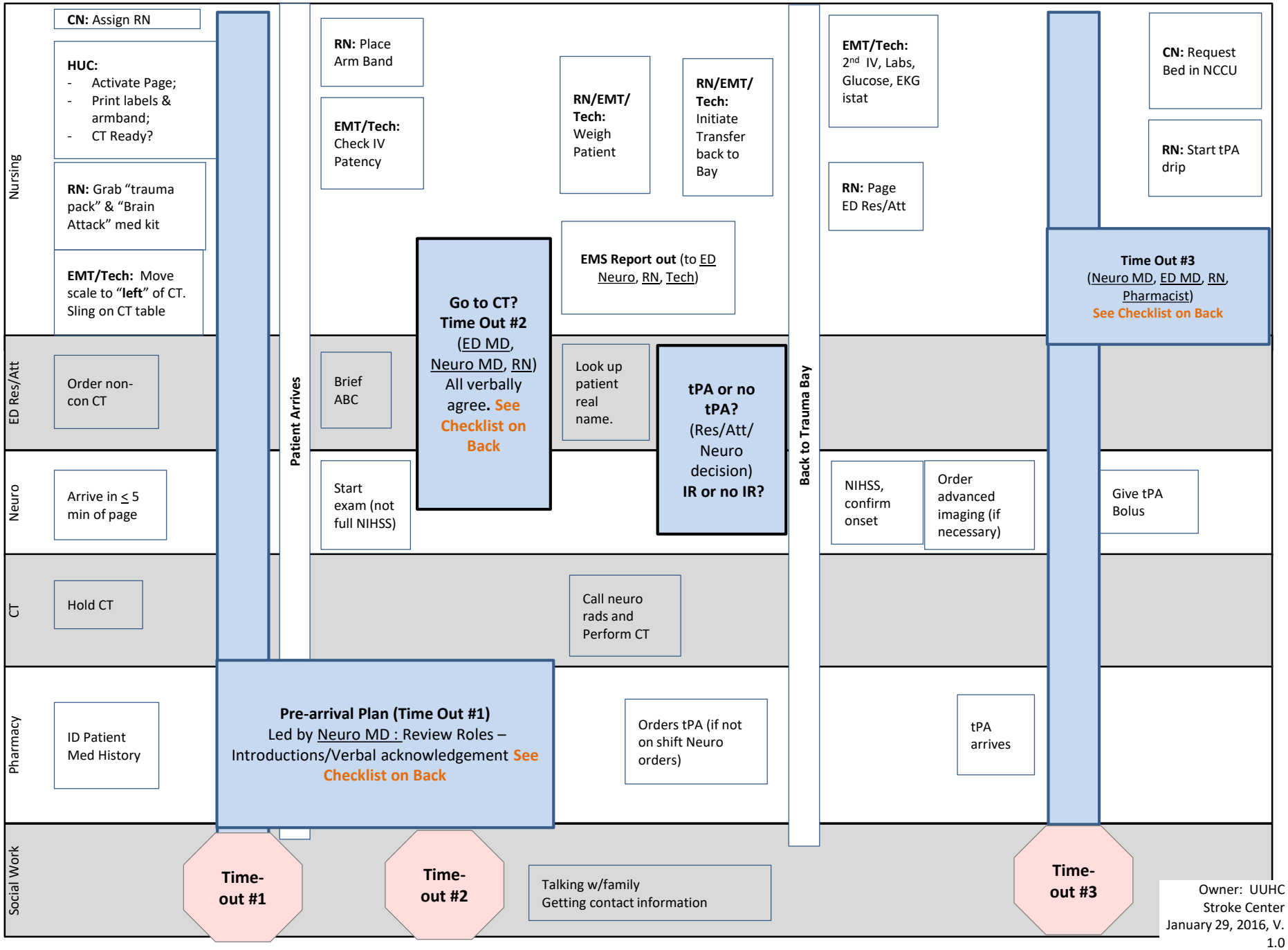
Brain Attack - ED Expedited CT Protocol



Owner: UUHC Stroke Center
January 29, 2016, V. 1.0

Brain Attack - ED Expedited CT Protocol

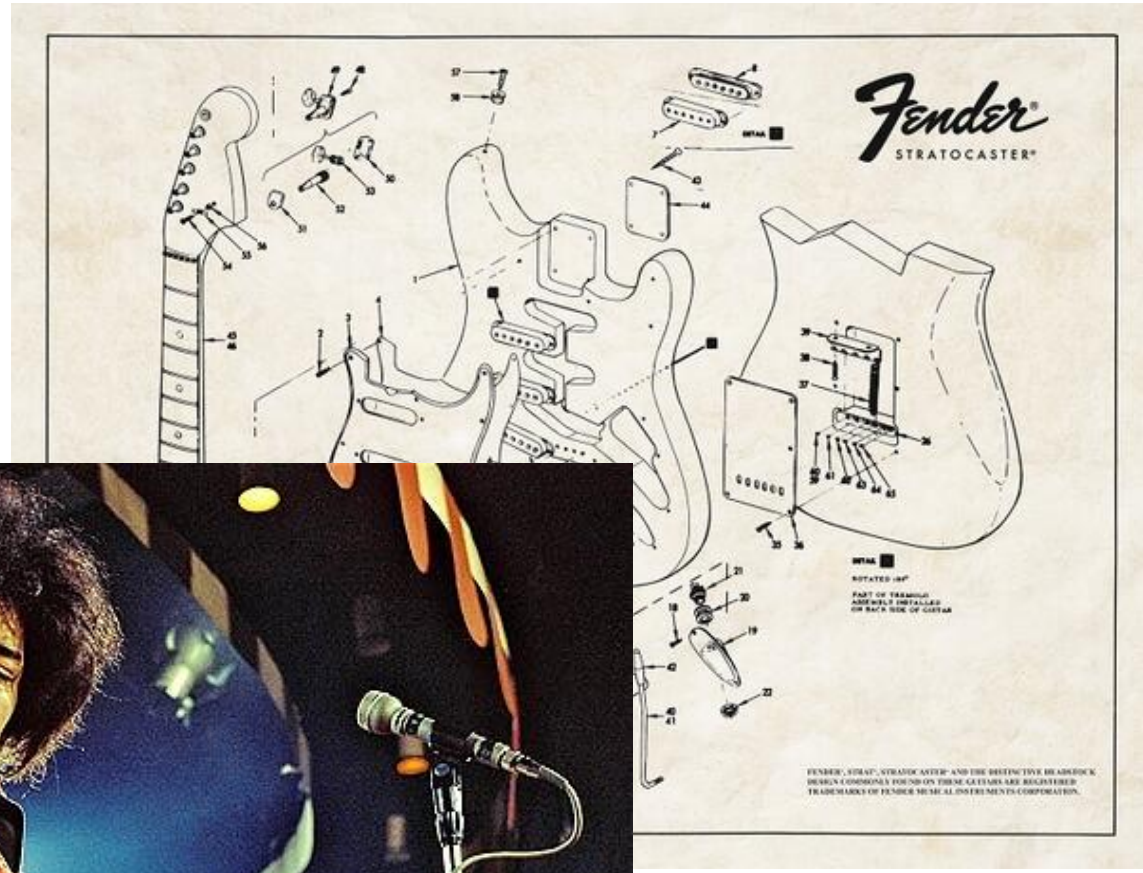
Nursing	**CN:** Assign RN **HUC:** - Activate Page; - Print labels & armband; - CT Ready? **RN:** Grab "trauma pack" & "Brain Attack" med kit **EMT/Tech:** Move scale to "**left**" of CT. Sling on CT table	**RN:** Place Arm Band **EMT/Tech:** Check IV Patency	**RN/EMT/ Tech:** Weigh Patient	**RN/EMT/ Tech:** Initiate Transfer back to Bay	**EMT/Tech:** 2nd IV, Labs, Glucose, EKG istat **RN:** Page ED Res/Att	**CN:** Request Bed in NCCU **RN:** Start tPA drip	
ED Res/Att	Order non-con CT	Brief ABC	**Go to CT? Time Out #2** (ED MD, Neuro MD, RN) All verbally agree. See Checklist on Back	Look up patient real name.	**tPA or no tPA?** (Res/Att/ Neuro decision) **IR or no IR?**		
Neuro	Arrive in ≤ 5 min of page	Start exam (not full NIHSS)			NIHSS, confirm	Order advanced imaging (if	Give tPA Bolus
CT	Hold CT						Call rads Perfo
Pharmacy	ID Patient Med History	**Pre-arrival Plan (Time Out #1)** Led by Neuro MD : Review Roles – Introductions/Verbal acknowledgement See Checklist on Back					
Social Work		Time-out #1	Time-out #2				Talking w/fa Getting con

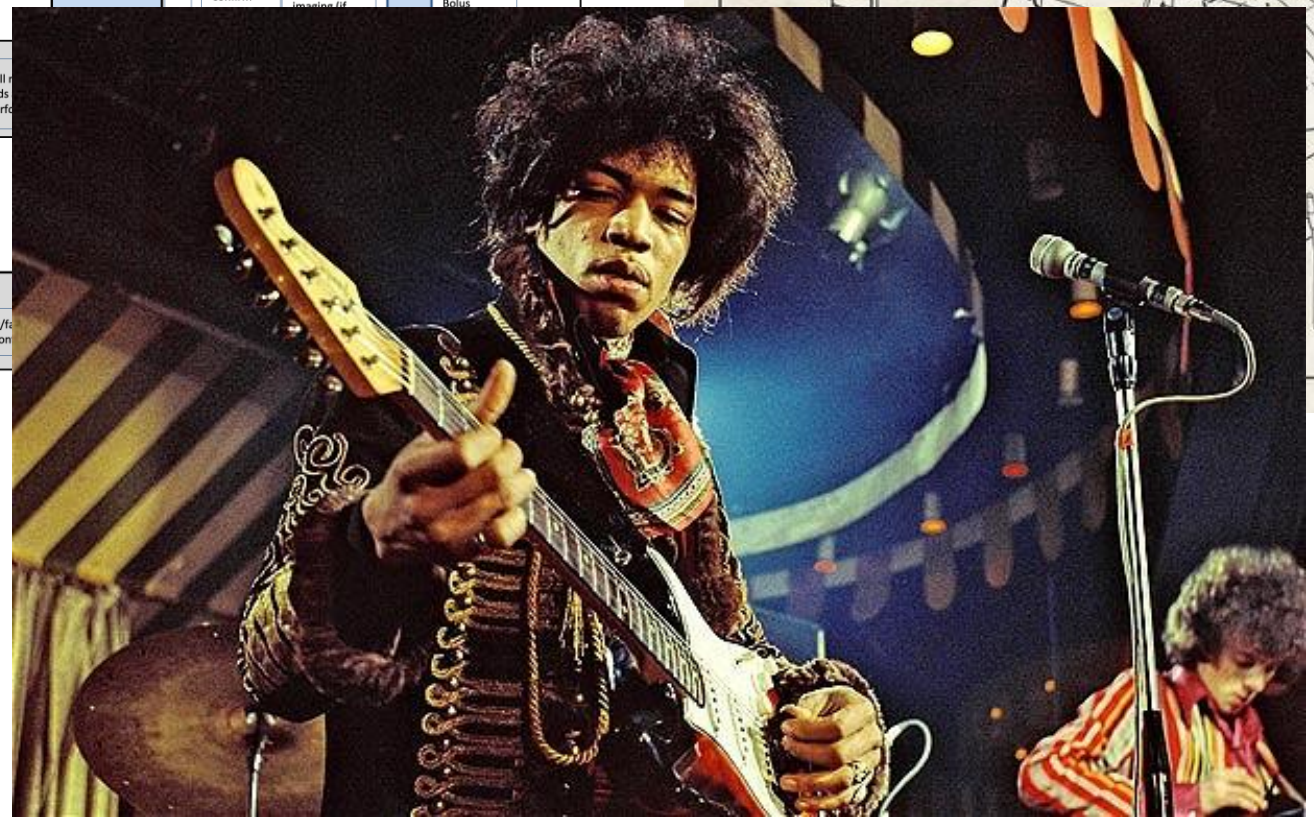
EMS Report out (to ED Neuro, RN, Tech)

Time Out #3 (Neuro MD, ED MD, RN, Pharmacist) See Checklist on Back

Patient Arrives

Back to Trauma Bay





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Simulations

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VA SIMLEARN CENTER (ORLANDO)

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DEBRIEFING

- Feedback
- Discussion
- Reflection

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ADULT LEARNING THEORY

- Debriefing
  - Should occur immediately
  - 2-3 times the length of scenario
  - Start with 5 minutes of initial reactions/feelings
  - End with 5 minutes of summary/generalization

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ADULT LEARNING THEORY

- Facilitator:
  - Guides, clarifies, gives constructive feedback, actively listens
  - Trustworthy, respectful, non-threatening
  - Not the expert but rather a co-learner

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ADULT LEARNING THEORY

- Plus-Delta (Decker, 2009, Jeffries, 2010)
  - What went well
  - What would like to change
  - How to change

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ADULT LEARNING THEORY

- Advocacy-Inquiry (Decker, 2009, Jeffries, 2010)
  - Statement of observation followed by probing question of inquiry/why

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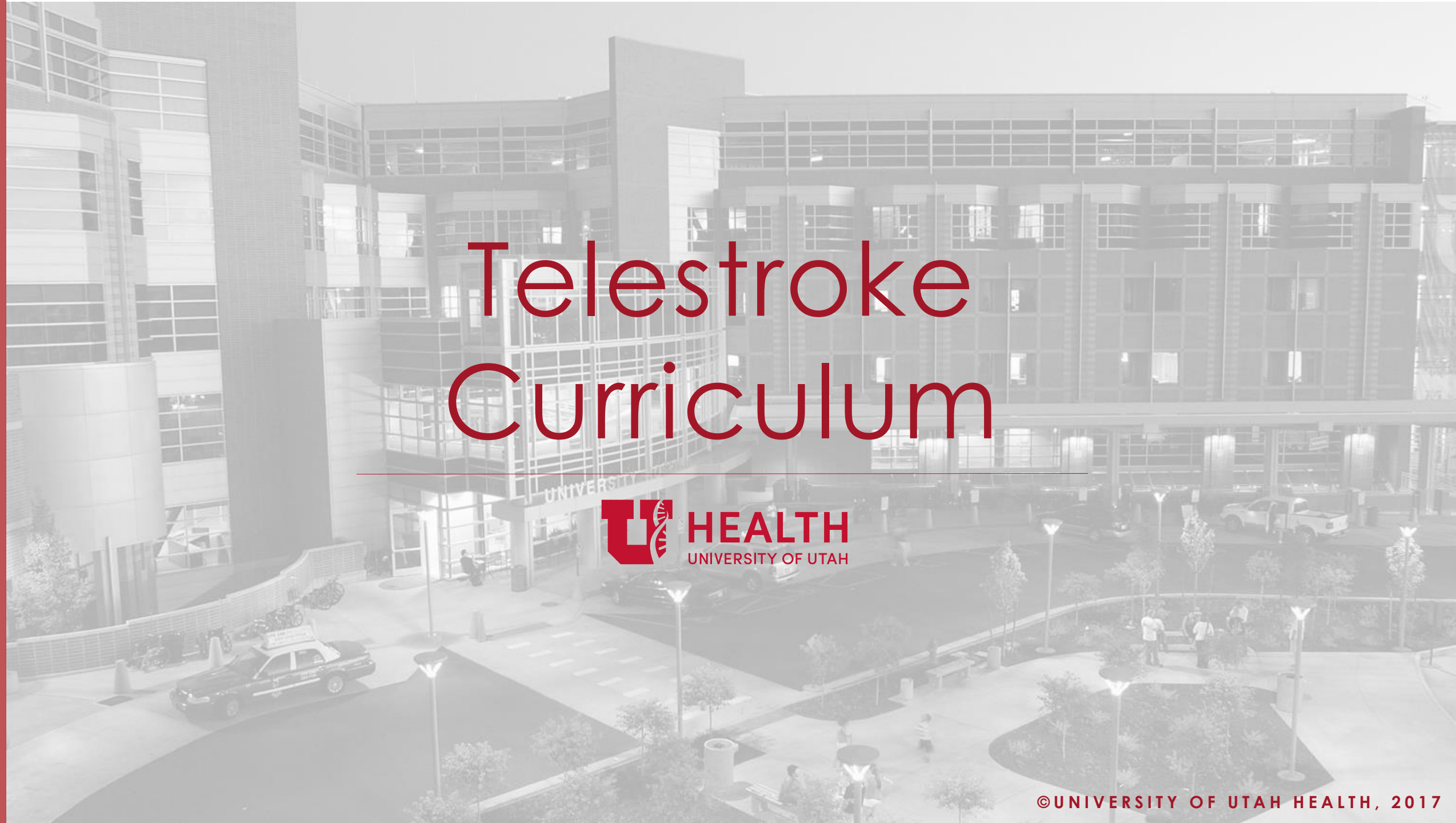

Telestroke Curriculum

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- Technology
- Licensure, medicolegal, ethics
- Attitudes, professionalism
- Informed consent, privacy
- Skills
- History, exam, documentation

- Teleneurology limitations

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Extension of Learning

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PROJECT ECHO

Extensions for **C**ommunity **H**eathcare **O**utcomes

- **Collaborative**: medical knowledge-sharing and collaborative practice
- **Longitudinal**: regular "**teleECHO clinics**" with community & rural providers
- **Conserves resources**: community providers present cases, get expert treatment plans
- **Fosters mentorship**: Specialist **mentors** and community provider **mentees**
- **Maintains community relationships**: Patients receive high-quality care in their communities from providers they **trust**.

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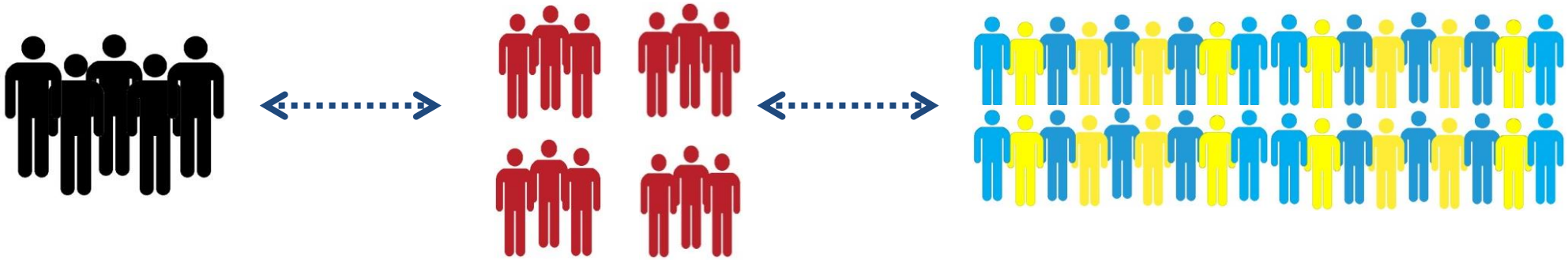
Project ECHO vs. Telestroke

Stroke ECHO Team

Community-based Care Teams

Patients reached with subspecialty knowledge



Stroke Specialist

Patient

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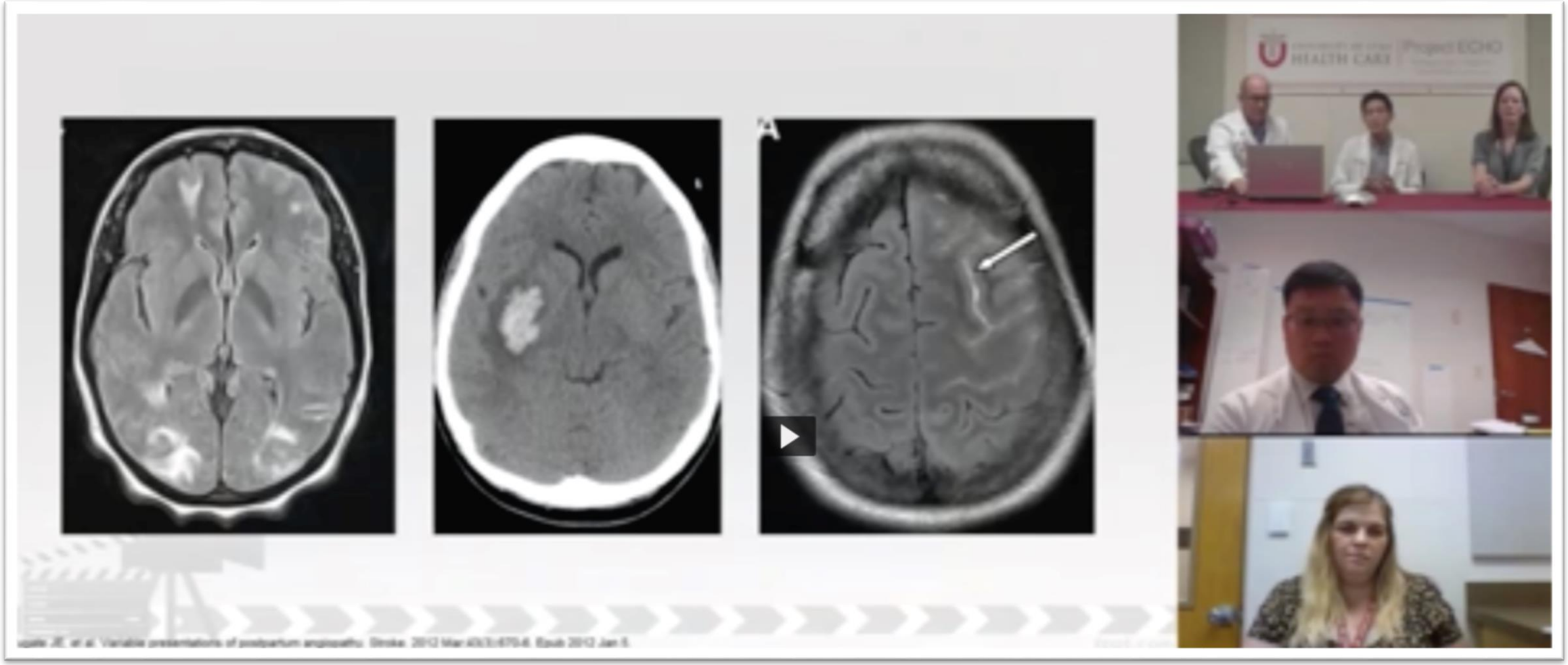
WHAT DOES **ECHO** LOOK LIKE?



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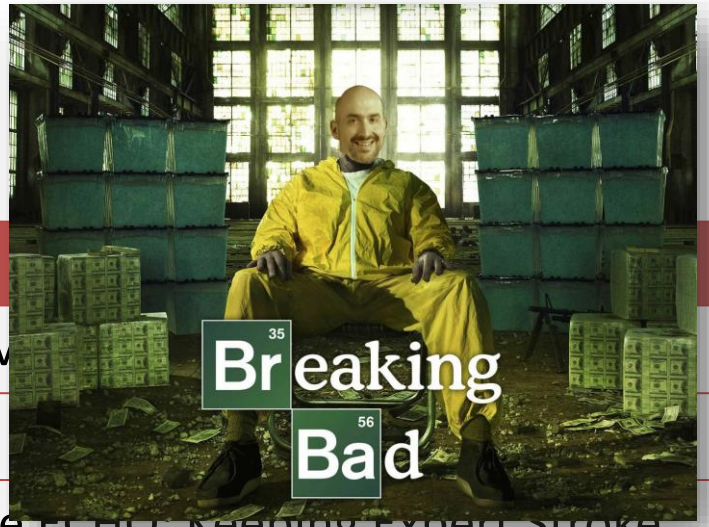
STROKE PROJECT ECHO



Dates	ECHO Topics
6/16/2016	The Need for Speed: The Importance of Timing in Endov
9/16/2017	Living on the Edge: New Guidelines for tPA in Stroke
1/26/2017	Northwest Regional Telehealth Resource Center: "Stroke ECHO: Keeping Expert Stroke Care in the Community"
2/2/2017	From Dusk till Dawn: Current Management and Future Directions of Wake-Up Strokes
6/16/2017	Project ECHO Pregnancy Care: Stroke and Pregnancy
6/22/2017	Look Who's Talking: Stroke and Stroke Prevention in Pregnancy
9/28/2017	There will be Blood: Evaluation and Management of Hemorrhagic Stroke
2/22/2018	Short Circuit: Best Practices for Telestroke Consultation
5/3/2018	A Wrinkle in Time: Extended Windows for Endovascular Stroke Treatment
8/30/2018	Breaking Bad Blood: Hemorrhagic Complications of Alteplase Treatment

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SUMMARY

- Telestroke training
  - Start small
  - Multi-modal
  - Incorporate simulations effectively
- Formal telemedicine curriculum
- Project ECHO & Force Multipliers

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THANK YOU!

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