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# The Essentials

# Stroke Abbreviations and Phrases

**What does it all mean?**

June 8, 2023

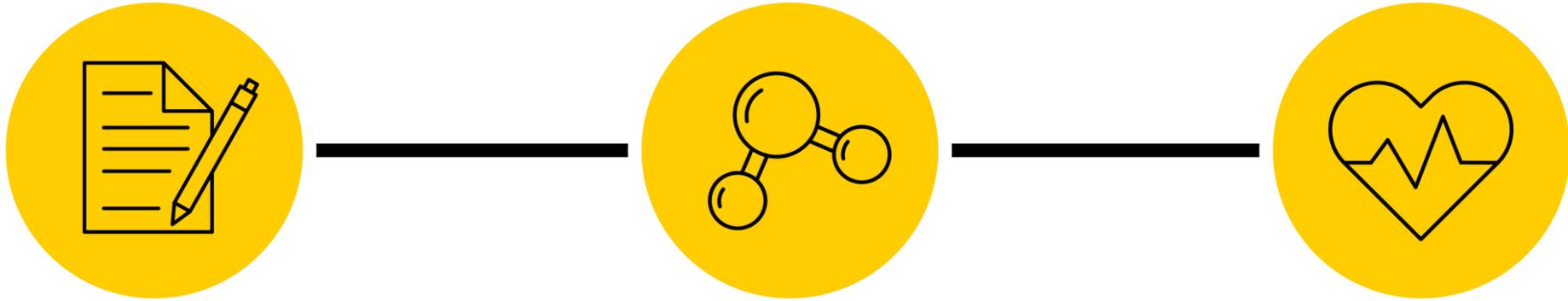
# Disclosures

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- None

# Objective

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Review terminology commonly used  
when caring for stroke patients.

# The Essentials



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# What does it all mean?

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LVO  
TIA  
MeVO  
tpa  
MRI  
AIS  
DIDO  
DSA  
IR  
ASPECT  
NIHSS  
ICH  
IPH  
Research Enrollment  
Non-con CT  
CTA  
SAH  
MRA  
CTP  
EVT  
TNK  
MT  
TICI

# Patient Arrival

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- CT, CTA, CTP
- negative or normal CT
- ASPECT
- NIHSS
- LVO, MeVO
- AIS
- ICH, IPH, SAH
- TIA

# Patient Arrival

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- Mr. Hernandez is a 59-year-old Hispanic male with **PMH** of uncontrolled type 2 diabetes mellitus, hypertension and smoking. Wife saw patient at baseline at 0830. She called 911 at 1000. Current symptoms right arm and leg weakness, facial droop and dysarthria.
- Presents to **ED** via **EMS** at 1015.
- Upon arrival to ED – determine time
  - Last known well vs. symptom discovery
  - When does the clock start for time sensitive treatments?

# Patient Arrival

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- Time starts at 0830
- Assessment & Imaging for Mr. Hernandez
  - **NIHSS** is 7.
  - **CT** unremarkable for **AIS** with a hyperdense left **MCA**. **ASPECTS** = 8.  
**CTA** indicates a **M1** occlusion.
  - Consult **NIR** for possible **MT**.

# NIH Stroke Scale

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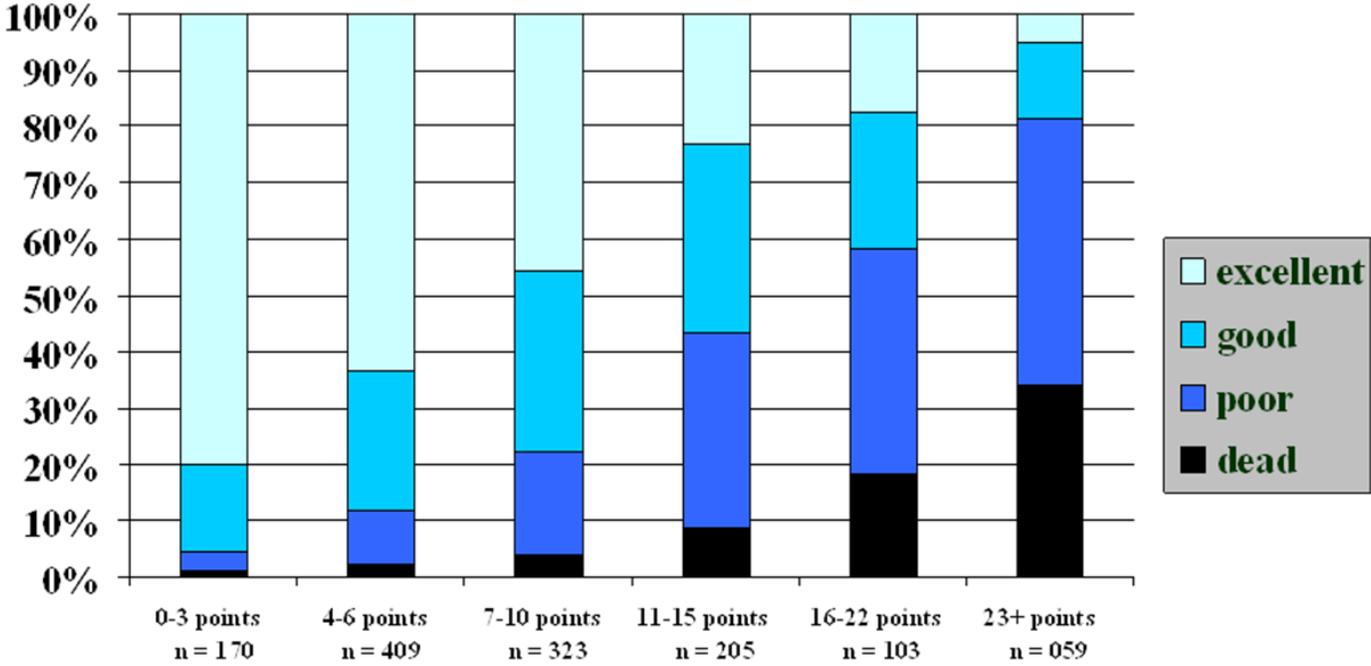
- Consciousness 0-3
- Commands 0-2
- Visual Fields 0-3
- Arm Motor (x2) 0-4
- Limb Ataxia 0-2
- Language 0-3
- Inattention/Neglect 0-2

- Orientation 0-3
- Gaze 0-2
- Facial Paresis 0-3
- Leg Motor (x2) 0-4
- Sensory 0-2
- Dysarthria 0-2

Mr. Hernandez:  
Right arm = 2  
Right leg = 2

Facial paresis = 2  
Dysarthria = 1

# NIH Stroke Scale



Adams Jr HP, et al, *Neurology*.1999;53:126

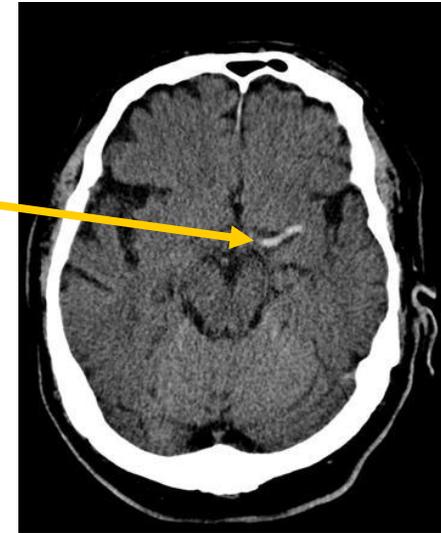
# Patient Arrival

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- Imaging

- CT = Non-Contrast Computed Tomography
- CTA = Computed Tomography Angiogram
- CTP = Computed Tomography Perfusion
  - Not required if < 6 hours from last known normal
- Negative head CT/Normal head CT
- MRI = Magnet Resonance Imaging

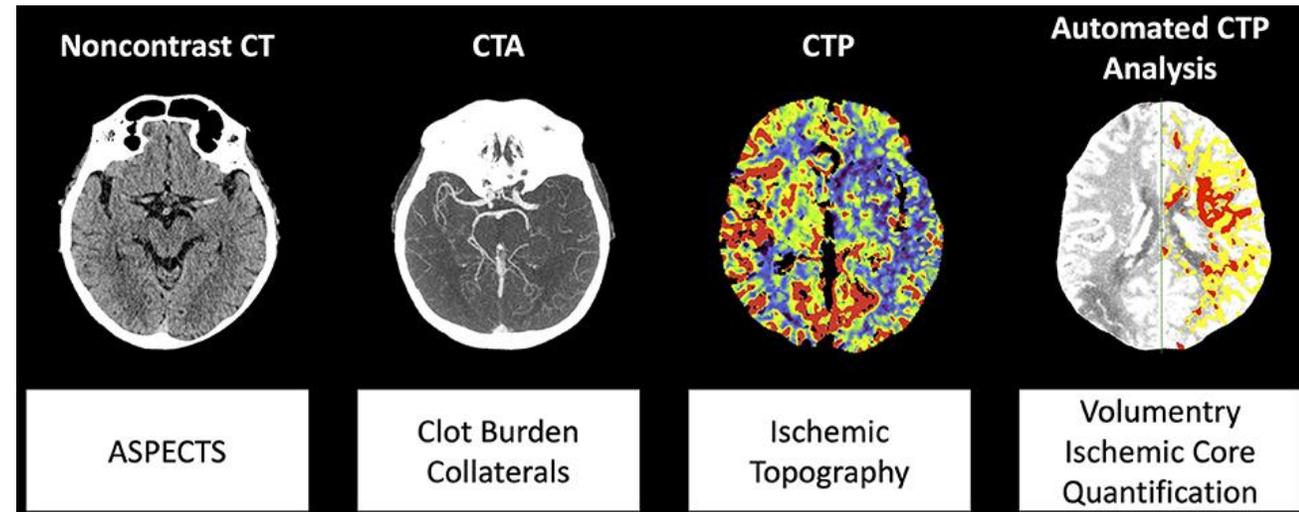
Hyperdense MCA



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# Patient Arrival

- Imaging
  - ASPECTS = Alberta Stroke Program Early CT Score
    - Anterior circulation hyperacute ischemia
    - Divides MCA territory into 10 regions
    - 1 – 10 scale
    - 10 = no changes
    - Assist with selection for mechanical thrombectomy
      - Score > 6



[https://www.frontiersin.org/files/Articles/651387/fneur-12-651387-HTML/image\\_m/fneur-12-651387-g001.jpg](https://www.frontiersin.org/files/Articles/651387/fneur-12-651387-HTML/image_m/fneur-12-651387-g001.jpg)

# Patient Arrival

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- Type of stroke
  - AIS – Acute Ischemic Stroke
  - TIA – Transient Ischemic Attack
  - Hemorrhagic Stroke
    - ICH – Intracerebral hemorrhage
      - Bleeding in the brain, IPH – intraparenchymal hemorrhage
    - SAH – Subarachnoid hemorrhage
      - Bleeding around the brain, usually due to aneurysm rupture

# Patient Arrival

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- Mr. Hernandez is a 59-year-old Hispanic male
- PMH of uncontrolled type 2 diabetes mellitus, hypertension and smoking
- Last known normal 0830
- NIHSS is 7
- CT unremarkable for AIS with a hyperdense left MCA
- Current time 1045
- BP = 175/78, HR = 88, RR = 16 on room air
- Eligible for IV Thrombolysis and MT

# Treatment

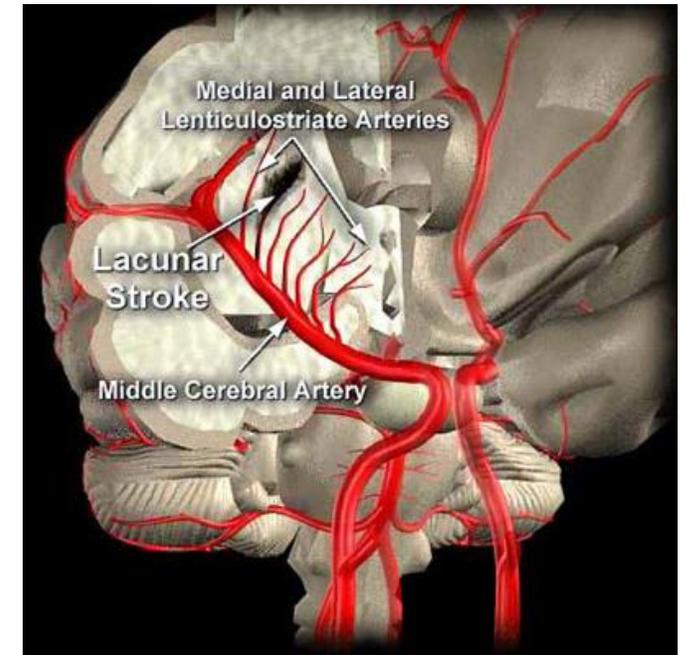
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- Thrombolytic Agents
  - Tissue-type Plasminogen Activator
    - Tpa, rt-Pa = Alteplase
    - TNK = Tenecteplase
- Endovascular Treatments
  - IR, NIR, NIS = Interventional Radiology, Neuro-interventional Radiology, Neuro-interventional Surgery
  - DSA = digital subtraction angiography, diagnostic angiogram
  - MT = mechanical thrombectomy
  - SAPTA = stent assisted percutaneous transluminal angioplasty

# Treatment

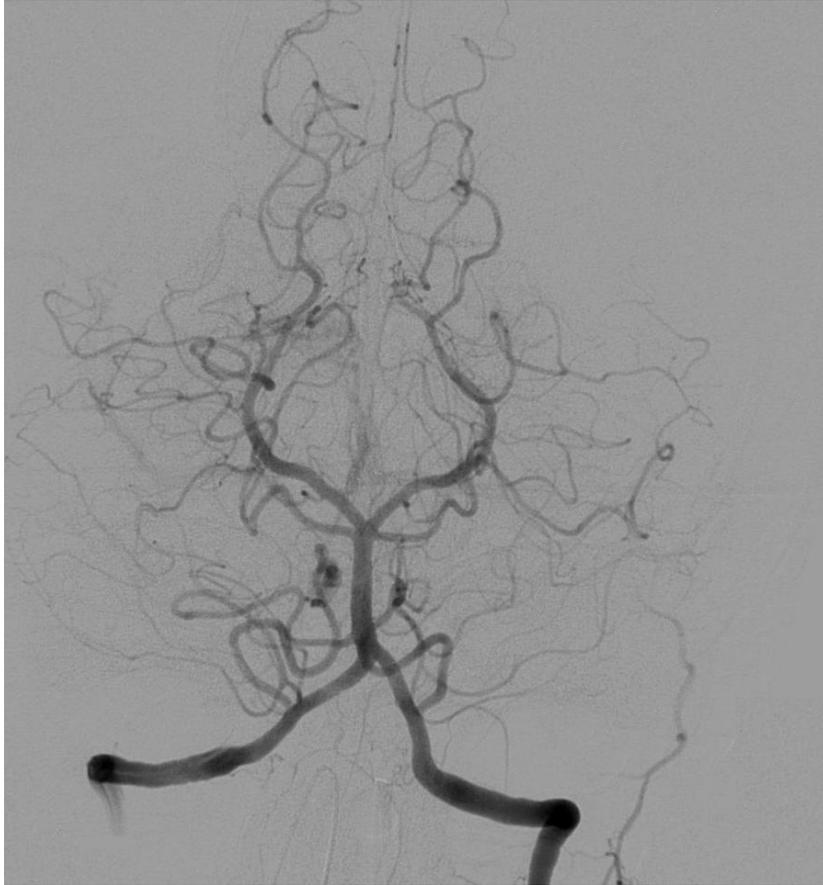
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- LVO = large vessel occlusion
  - Candidate for MT
- TICI = Thrombolysis in Cerebral Infarction
  - Grading scale for reperfusion after mechanical thrombectomy
- MeVO = medium vessel occlusion
  - Research trials evaluating benefit of MT

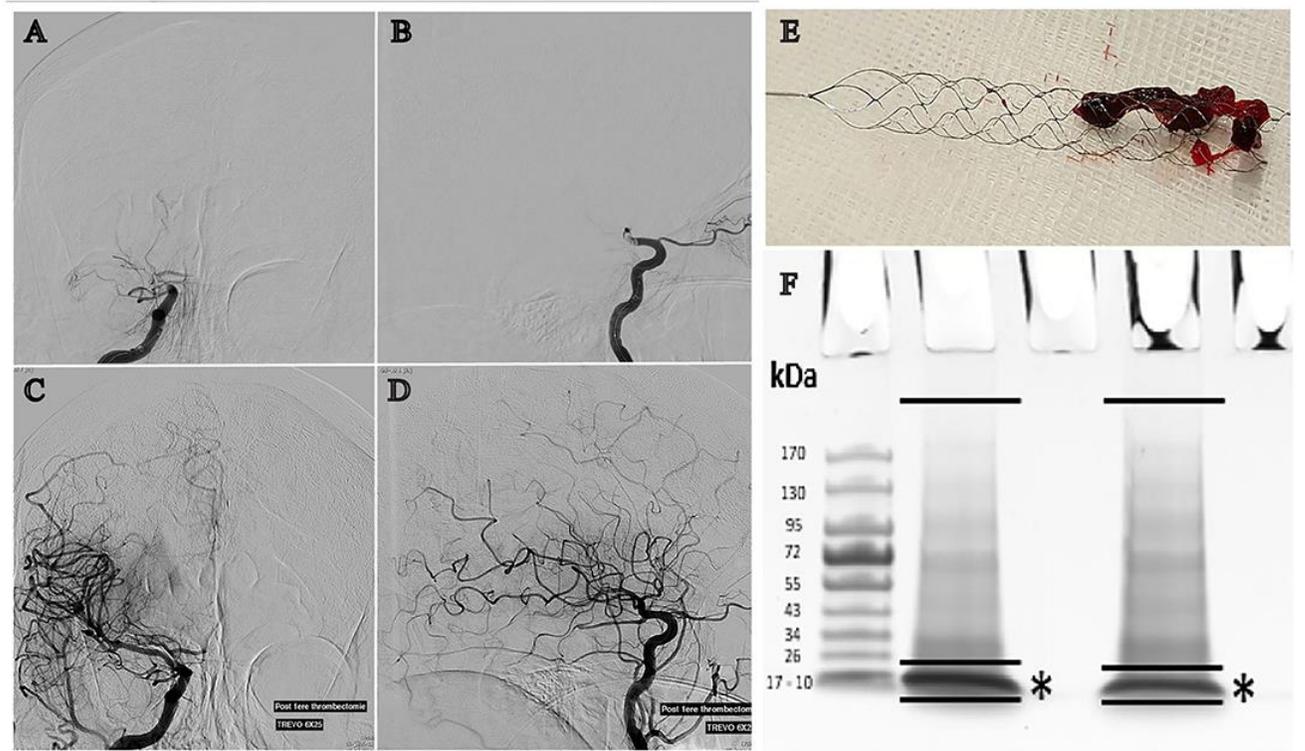


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# Thrombectomy



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# Put it together - Essentials

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- Mr. Hernandez is a 59-year-old Hispanic male with **PMH** of uncontrolled type 2 diabetes mellitus, hypertension and smoking. Wife saw patient at baseline at 0830. She called 911 at 1000. Current symptoms right arm and leg weakness, facial droop and dysarthria. Presents to **ED** via **EMS** at 1015. **LKW** time is 0830. Stroke team evaluated patient. **NIHSS** = 7. **CT** with **ASPECTS** of 8. Eligible for thrombolytics. Alteplase given at 1100. **CTA** indicates **LVO**, M1 occlusion, **NIR** consulted and taken emergently for **MT**. Procedure report states a **TICI** 3.

# Metrics

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- A colleague mentions that the Quality Department wants the Emergency Department to start looking at **DIDO** and **DTN**.

???????

# Metrics

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- DIDO – Door In Door Out
  - Door In = patient arrives at Emergency Department
  - Door Out = patient transfers out of Emergency Department to another facility
  
  - Mr. Hernandez arrived at 1015. Transferred out of the ED to the thrombectomy center at 1130.
  - DIDO time is? \_\_\_\_\_

# Metrics

- DIDO – Door In Door Out
  - Door In = patient arrives at Emergency Department
  - Door Out = patient transfers out of Emergency Department to another facility
  - Mr. Hernandez arrived at 1015. Transferred out of ED to thrombectomy center at 1130.
  - DIDO time is?
    - **75 minutes**

DIDO Goal Time	Benchmark Goal	Iowa Rate
< 90 minutes	50%	37%

# Metrics

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- DTN – Door to Needle time
  - ED arrival time to IV thrombolysis administration
  - Mr. Hernandez arrived at 1015. IV alteplase was administered at 1100.
  - DTN time is? \_\_\_\_\_

# Metrics

- DTN – Door to Needle time
  - ED arrival to IV thrombolysis administration
  - Mr. Hernandez arrived at 1015. IV alteplase was administered at 1100.
  - DTN time is?
    - **45 minutes**

Goal Time	Benchmark Goal	Iowa Rate
< 60 minutes	75%	71%
< 45 minutes	50%	42%

# Put it together - Essentials

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- Mr. Hernandez received **tPa**. He had a **DTN** of 45 minutes and a **DIDO** of 75 minutes. CT indicates an ASPECT of 8. CTA/CTP completed upon arrival indicates a LVO of left MCA with perfusion mismatch. He was evaluated by NIR and taken to the OR for MT. MT completed with a TICI 3.

# Research

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- Eligibility
- Consent
- Enrollment
- Intervention – Study Protocol
- Compile Data/Results
- Publish
- Incorporate into practice

# References

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- Mokin, M., Siddiqui, A. H., & Turk, A. S. (2017). ASPECTS (Alberta Stroke Program Early CT Score) Measurement Using Hounsfield Unit Values When Selecting Patients for Stroke Thrombectomy. *Stroke*, 48(6), 1574–1579. <https://doi.org/10.1161/strokeaha.117.016745>
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# Questions?

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# Thank you

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