The New Landscape for Acute Ischemic Stroke Treatments

David Y. Huang, MD, PhD, FAHA, FANA, FAAN

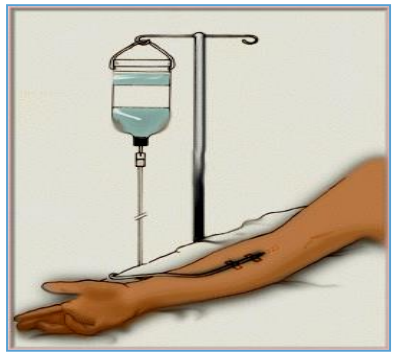
Professor, Department of Neurology

Director, UNC Health Care Comprehensive Stroke Center

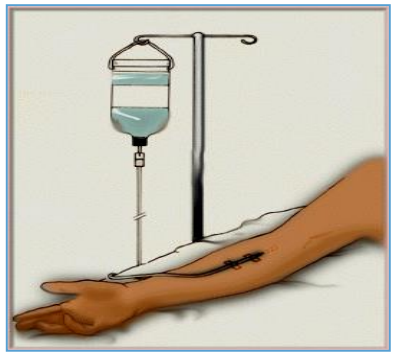
The University of North Carolina at Chapel Hill

Ischemic Stroke Treatment Toolbox

IV Therapy Alone



Combination Therapy



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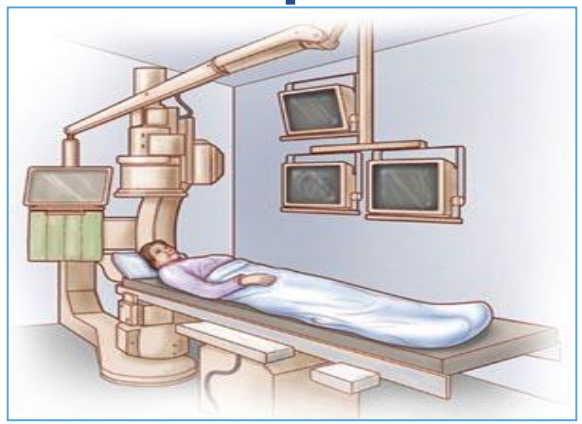
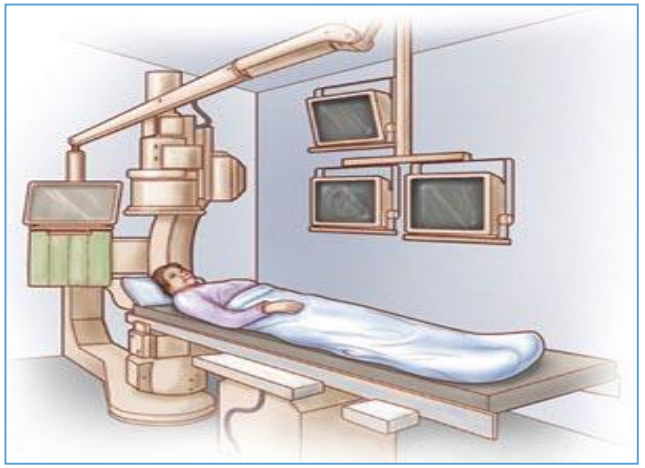


Endovascular Therapy Alone



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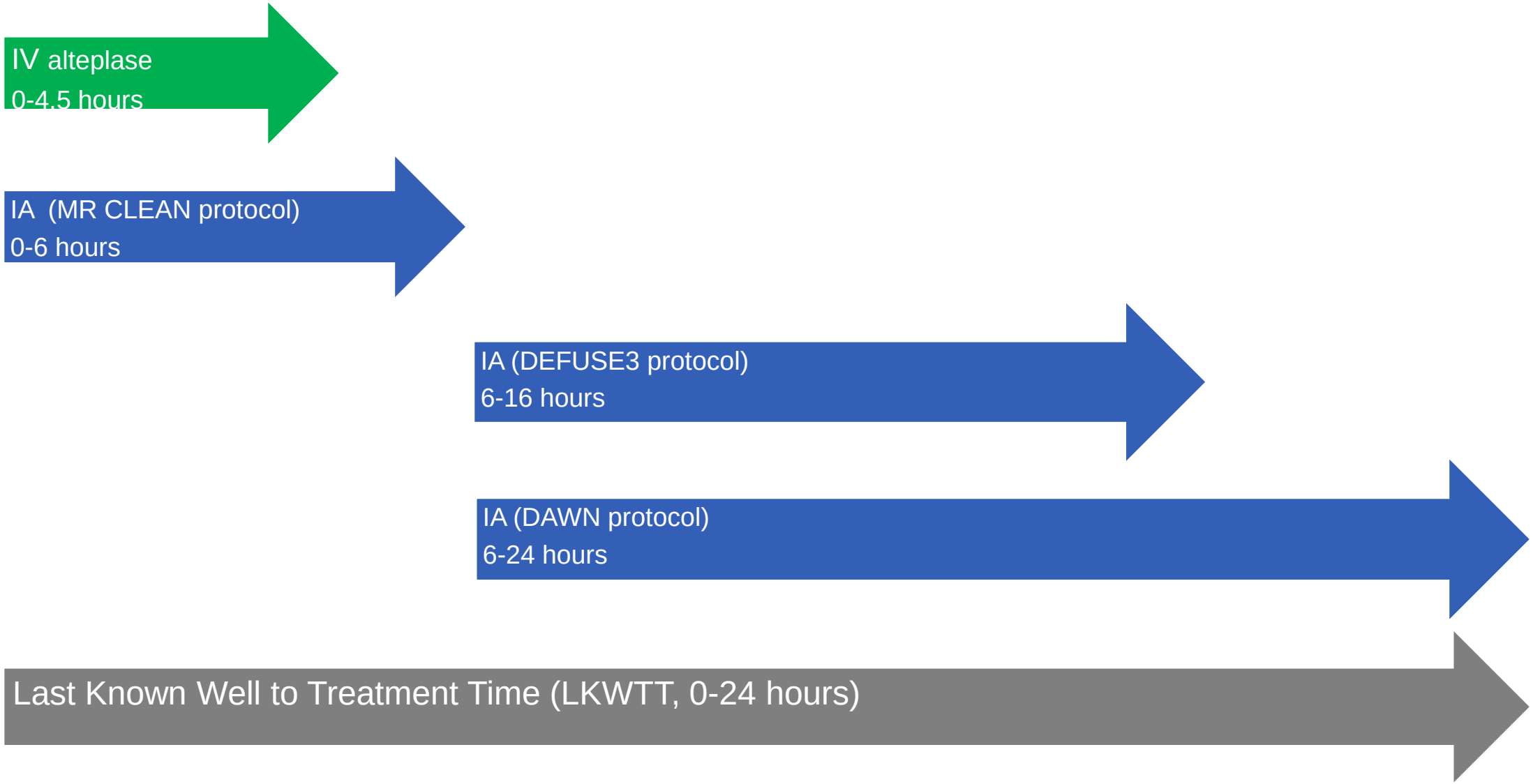
Acute Ischemic Stroke: Treatment Options by LKWTT

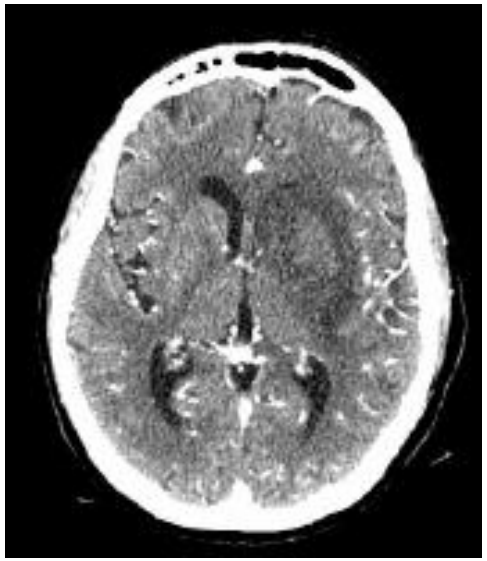


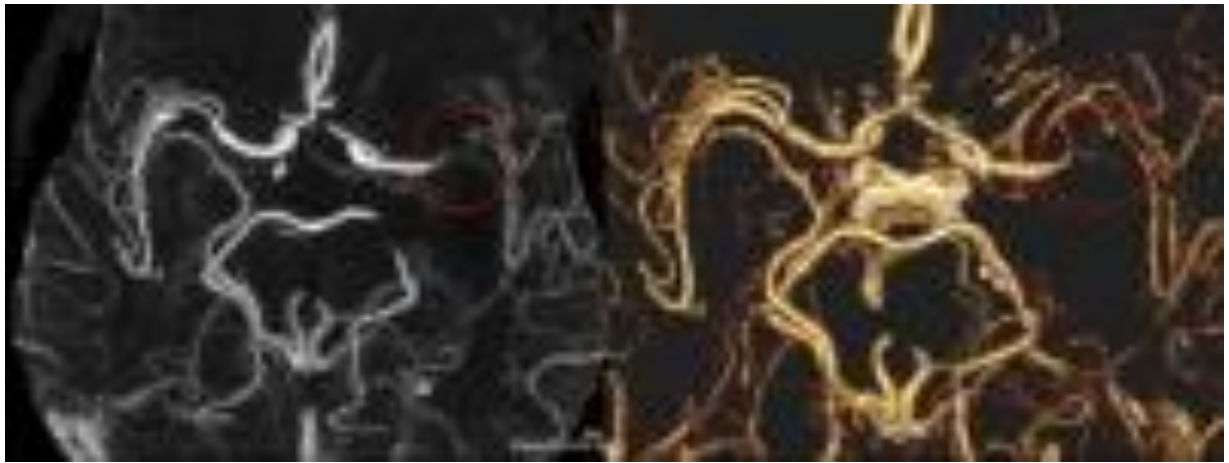
The New Era of DAWN and DEFUSE

- Two papers now support a longer window of endovascular treatment for some patients
- Advanced imaging is needed to select eligible patients
- Neither study supplants the need to treat stroke patients as quickly as possible
  - Still have great need for ASRH and PSCs
- Based on some preliminary observations, only 2-3% of all stroke patients presenting in the extended window will meet eligibility criteria for DAWN or DEFUSE
  - No need to transport all patients in the extended window to interventional centers

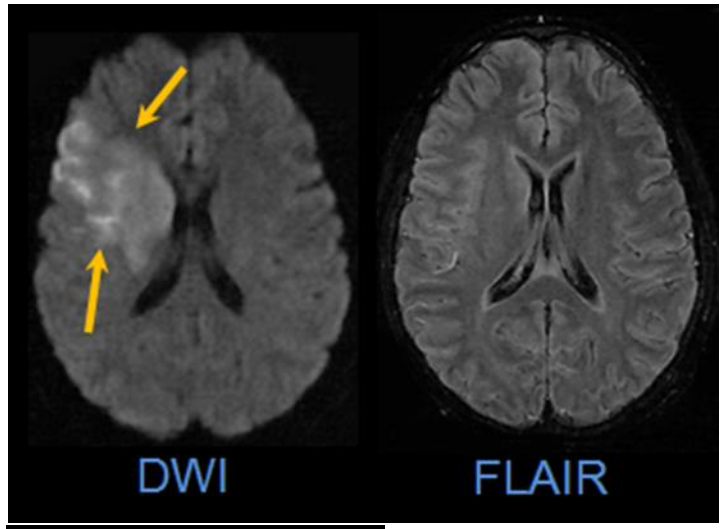
Acute Imaging: Angiography

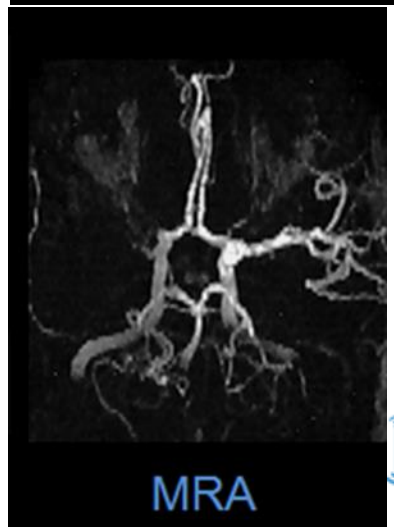
- CT/CTA



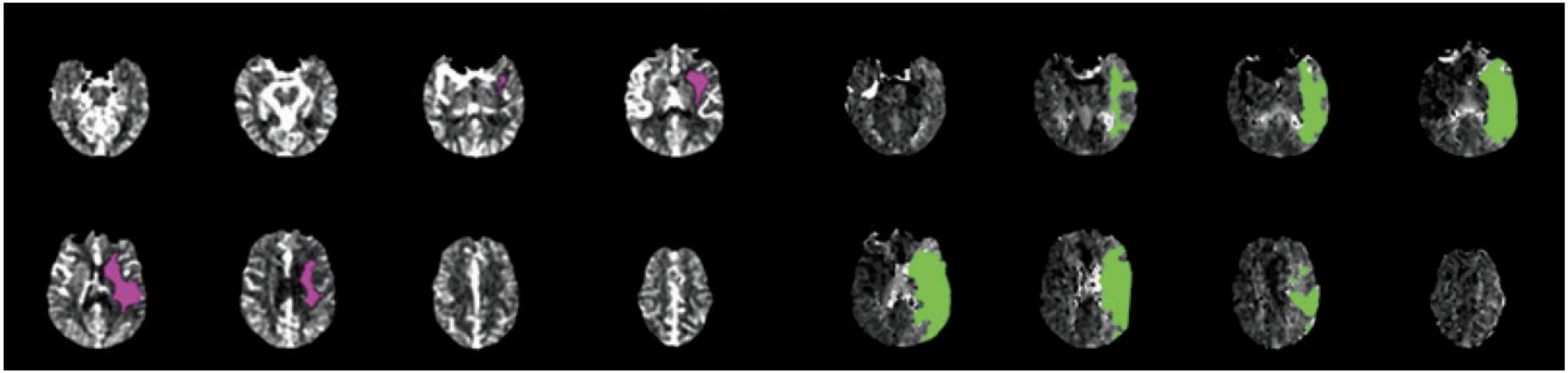


- MRI/MRA





Ischemic Core and Perfusion Imaging



Volume of Ischemic Core, 23 ml

Volume of Perfusion Lesion, 128 ml

Mismatch volume, 105 ml
Mismatch ratio, 5.6

Table 1: Application of DAWN and DEFUSE-3 Trial Criteria to 2667 Acute ischemic stroke patients between Nov 2014 and Feb 2017.

	DAWN Trial		DEFUSE-3 Trial	
LKW to Arrival Time	6-24 hours	792 (30%)	6-16 hours	451 (17%)
NIHSS Score	≥ 10	890 (33%)	≥ 6	1242 (47%)
Patients meeting LSW to Arrival time and NIHSS Criteria		298		285
Presence of proximal anterior large vessel occlusion MCA-M1/ ICAT/ Intracranial IC occlusion with or without extracranial IC occlusion		155		133
Mismatch Criteria and Baseline mRS	mRS 0-1	Core ≤50cc and presence of clinical core mismatch	mRS 0-2	Target mismatch profile on perfusion imaging
	45		47-58	
Percentage of patients eligible for Trial enrollment	1.7%		1.8-2.2%	
Patients meeting DAWN and DEFUSE-3 Criteria	30 (1.1%)			
Patients meeting DAWN and/or DEFUSE-3 criteria	73 (2.7%)			

Desai, et al. UPMC (personal communication)

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Hurdles to Reducing Onset-to-Intervention Times in New Systems of Stroke Care

- Hubs (CSCs and Interventional-Capable PSCs)
  - ~ 12 hospitals in NC capable of advanced interventions
    - cost prohibitive for most other hospitals
  - Not all Hubs offer 24/7/365 access
  - Limited bed availability force some Hubs to divert
  - Goals
    - improve access
      - streamline referral process
      - help referring hospitals select patients eligible for intervention
      - education for referring hospitals and transport agencies
    - improve notification methods when on divert
      - Important for inter-facility transfers as well as initial transport of patients
    - “autolaunch” capability
    - reduce door-to-device times
    - prepare for the eventuality of DAWN/DEFUSE3-eligible patients

Hurdles to Reducing Onset-to-Intervention Times in New Systems of Stroke Care

Referring Hospitals

- ASRHs or other stroke capable hospitals
  - IV alteplase patients are generally transferred out
  - May have limited awareness of potential interventional opportunities
  - Most do not have ability to perform emergent CTAs (this may need to change)
- PSCs
  - Usually keep uncomplicated IV alteplase patients
  - Many, but not all, perform emergent CTAs (this may need to change)
  - Hardly any are capable of advanced core/perfusion imaging (this may need to change)
- Goals
  - Improve door-to-needle times for IV alteplase
  - Improve door-to- transfer request times by developing rapid referral protocols
    - Know your Hubs: who, when, and how
  - Reduce the number of transfers to Hubs who do not require complex care
    - Develop protocols to better identify intervention-eligible patients
    - Develop CTA protocols and core/perfusion protocols and work with Hubs to upload images for review
  - Improve DIDO – make sure patients are ready to go as soon as transport arrives

Proposed Next Steps

- Continue current SAC dialogue: Integrating and Accessing Care
- Encourage each Hub to begin dialogues with their referring hospitals (increase capabilities) and transport systems
- Provide education government and health care leadership on the current issues and needs
- Organize a meeting (SAC, Hub leadership teams, NCHA, NCCEP, NCOEMS, NCDHHS, Critical Care Transport leadership, others) to continue dialogue on a larger scale

2017 GET WITH THE GUIDELINES STROKE GOLD PLUS

TARGET: STROKE HONOR ROLL

THANK YOU

The Joint Commission National Quality Approval

American Heart Association
American Stroke Association
CERTIFICATION
Meets standards for
Comprehensive Stroke Center

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