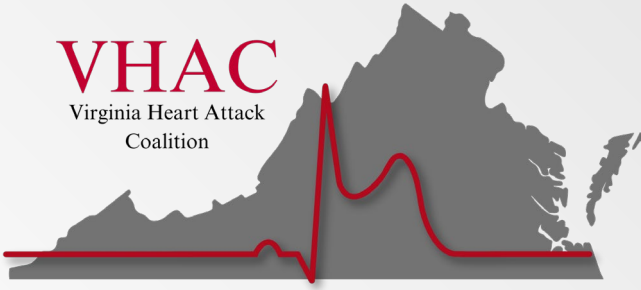


**VHAC**  
Virginia Heart Attack  
Coalition



# Thrombolytic Workgroup Update

RECOMMENDATIONS FOR  
THROMBOLYTIC TREATMENT

Proud partner of



# Objectives

- Primary
  - Define who should receive fibrinolytic/thrombolytic treatment
  - Define which thrombolytic should be given
  - Define appropriate adjunctive treatments
- Secondary
  - Define timing of coronary angiography
  - Identify other treatment/monitoring opportunities

# What community hospitals does your program receive transferred STEMI patients?

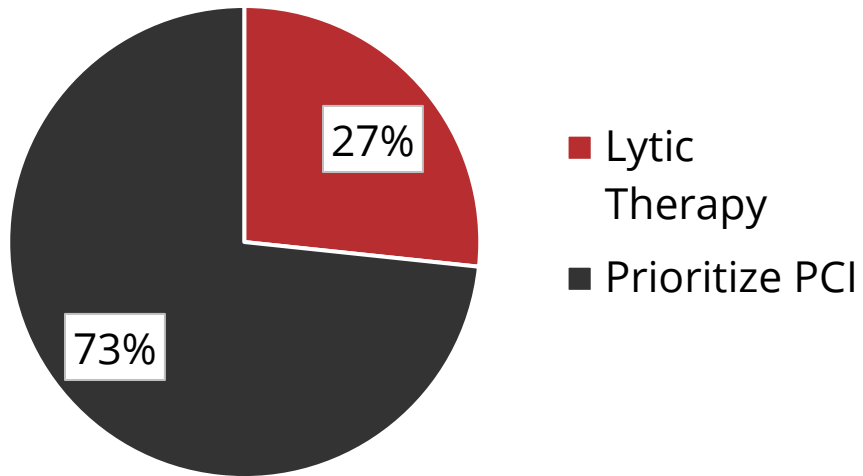
Almost 40 different sites

Alleghany Medical Center  
Bon Secours Colonial Heights  
Bon Secours Southampton Medical Center  
Bon Secours Southern Virginia Medical Center  
Carilion Roanoke  
Centra Bedford  
Centra Gretna  
Centra Southside (Farmville)  
Chester Freestanding ED  
Colonial Heights, Freestanding ED  
Community memorial Hospital (South Hill)  
Culpeper  
Duke  
Freestanding Emergency Center  
Giles Medical Center  
INOVA Healthplexes  
King George  
Langley AFB Hampton VA  
New Kent Freestanding ER  
Pulaski Medical Center

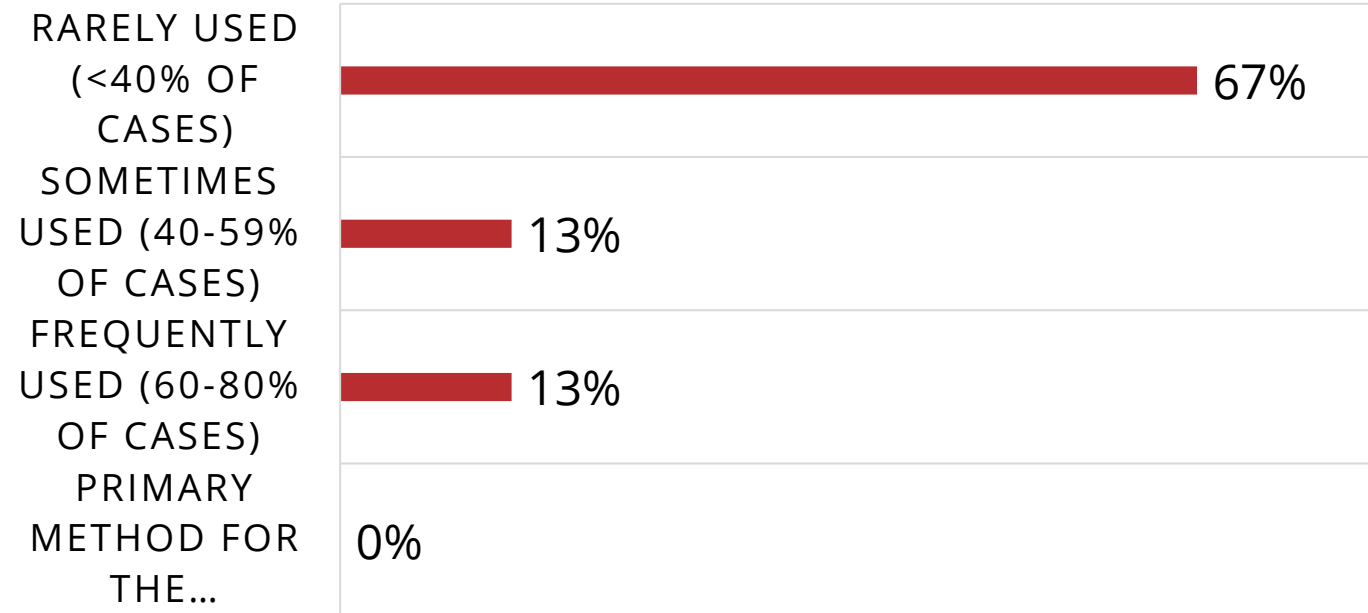
PW Hospital  
Rappahannock General  
Rappahannock Regional Medical Center  
Richmond Community Hospital  
Riverside Doctor's Hospital  
Riverside Walter Reed  
Sentara Halifax Regional  
Sentara Port Warwick  
Sentara Williamsburg  
Short Pump Freestanding ED  
Southampton Medical Center  
Southern Virginia Medical Center  
Southside Community in Halifax  
Sovah Danville  
Sovah Health Martinsville  
Stafford Hospital Westmorland  
Tappahannock hospital  
West Chester Freestanding ED  
Wytheville hospital

# Survey Results (18 responses)

What is your primary method for treating transferred STEMI patients?



Select the option that best describes their usage frequency of thrombolytics for treating transferred STEMI patients.



# When should you consider giving thrombolytics?

- When the time to primary PCI exceed 120 minutes
- Based on current guidelines and benefits of early reperfusion
- In general, pertains to patient being transferred from community hospitals without primary PCI capability more than 50 miles away
- For receiving centers that are using a primary PCI strategy, they should assess and monitor times to confirm that time goals are met
- If not, it should be strongly considered instituting an initial thrombolytic treatment strategy

# Regional Systems of STEMI Care, Reperfusion Therapy, and Time-to-Treatment Goals



Immediate transfer to a PCI-capable hospital for primary PCI is recommended for patients with STEMI who initially arrive at a non-PCI-capable hospital, with an FMC-to-device time system goal of 120 minutes or less.\*



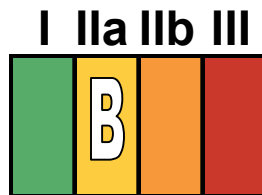
In the absence of contraindications, fibrinolytic therapy should be given to patients with STEMI at non-PCI-capable hospitals when the anticipated FMC-to-device time at a PCI-capable hospital is >120 minutes because of unavoidable delays.

\*The proposed time windows are system goals. For any individual patient, every effort should be made to provide reperfusion therapy as rapidly as possible.

# Regional Systems of STEMI Care, Reperfusion Therapy, and Time-to-Treatment Goals



When fibrinolytic therapy is indicated or chosen as the primary reperfusion strategy, it should be administered within 30 minutes of hospital arrival.\*



Reperfusion therapy is reasonable for patients with STEMI and symptom onset within the prior 12 to 24 hours who have clinical and/or ECG evidence of ongoing ischemia. Primary PCI is the preferred strategy in this population.

\*The proposed time windows are system goals. For any individual patient, every effort should be made to provide reperfusion therapy as rapidly as possible.

# Contraindications and Cautions for Fibrinolytic Therapy

## Absolute contraindications

- Any prior ICH
- Known structural cerebral vascular lesion (e.g., AVM) or malignant brain tumor
- Ischemic stroke within 3 mo EXCEPT acute ischemic stroke within 4.5 h
- Suspected aortic dissection
- Active bleeding or bleeding diathesis (excluding menses)
- Significant closed-head or facial trauma within 3 mo
- Intracranial or intraspinal surgery within 2 mo
- Severe uncontrolled hypertension (unresponsive to emergency therapy)

## Relative contraindications

- Significant hypertension on presentation (SBP 180 mm Hg or DBP 110 mm Hg)
- History of prior ischemic stroke 3 mo
- Dementia
- Traumatic or prolonged (10 min) CPR
- Major surgery (3 wk)
- Recent (within 2 to 4 wk) internal bleeding
- Noncompressible vascular punctures
- Pregnancy
- Active peptic ulcer
- Oral anticoagulant therapy

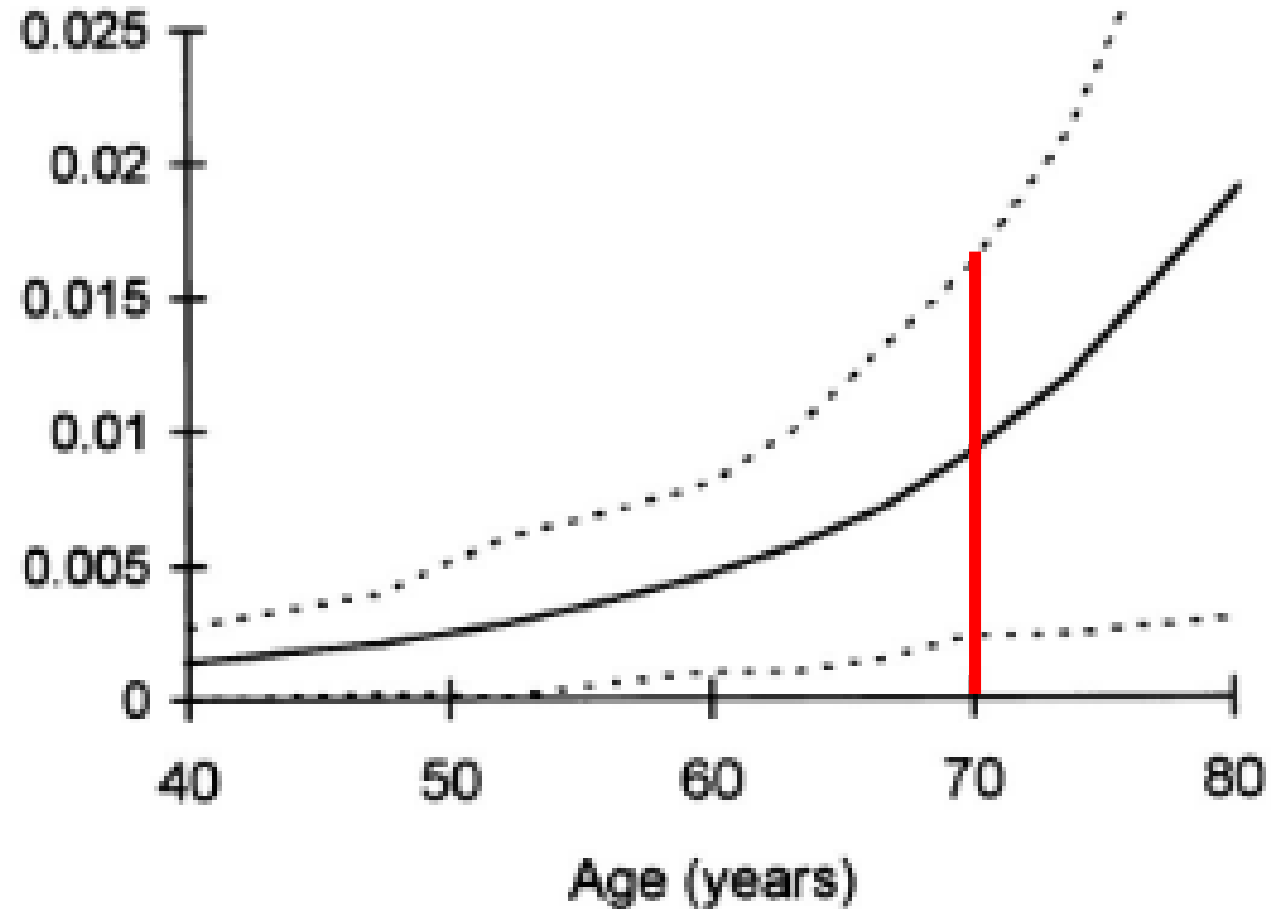


# Which thrombolytic should be used?

- TNK is preferred
  - Has comparable efficacy to tPA
  - Significantly lower rate of major bleeding
  - No difference in rate of ICB
  - No difference in rate reperfusion
  - No difference in mortality
- Half dose TNK should strongly be considered for patients >70–75 yo
  - Data based on STREAM study
  - Substantial decrease in the rate of ICB in older patients with similar efficacy

# Intracranial hemorrhage and fibrinolytics

- Risk Factors:
  - Older Age
  - Low weight
  - Prior stroke
  - Increased BP
- STREAM Trial--Facilitated vs primary PCI
- Rate of ICB in pt > 75
  - Full dose: 3 of 37 (8%)
  - Half dose: 0 of 97 (0%)



Gore J et al Circulation. 1995;92:2811-2818

# What adjunctive therapy should be given?

- Aspirin:
  - 324 mg
- Clopidogrel:
  - 300 mg for patients < 75
  - 75 mg for those 75 and over
- Unfractionated heparin:
  - Bolus 60 units/kg, max 4000 units
  - Infusion 12 units/kg/hour, maximum 1000 units

# When Should Coronary Angiography be Performed?

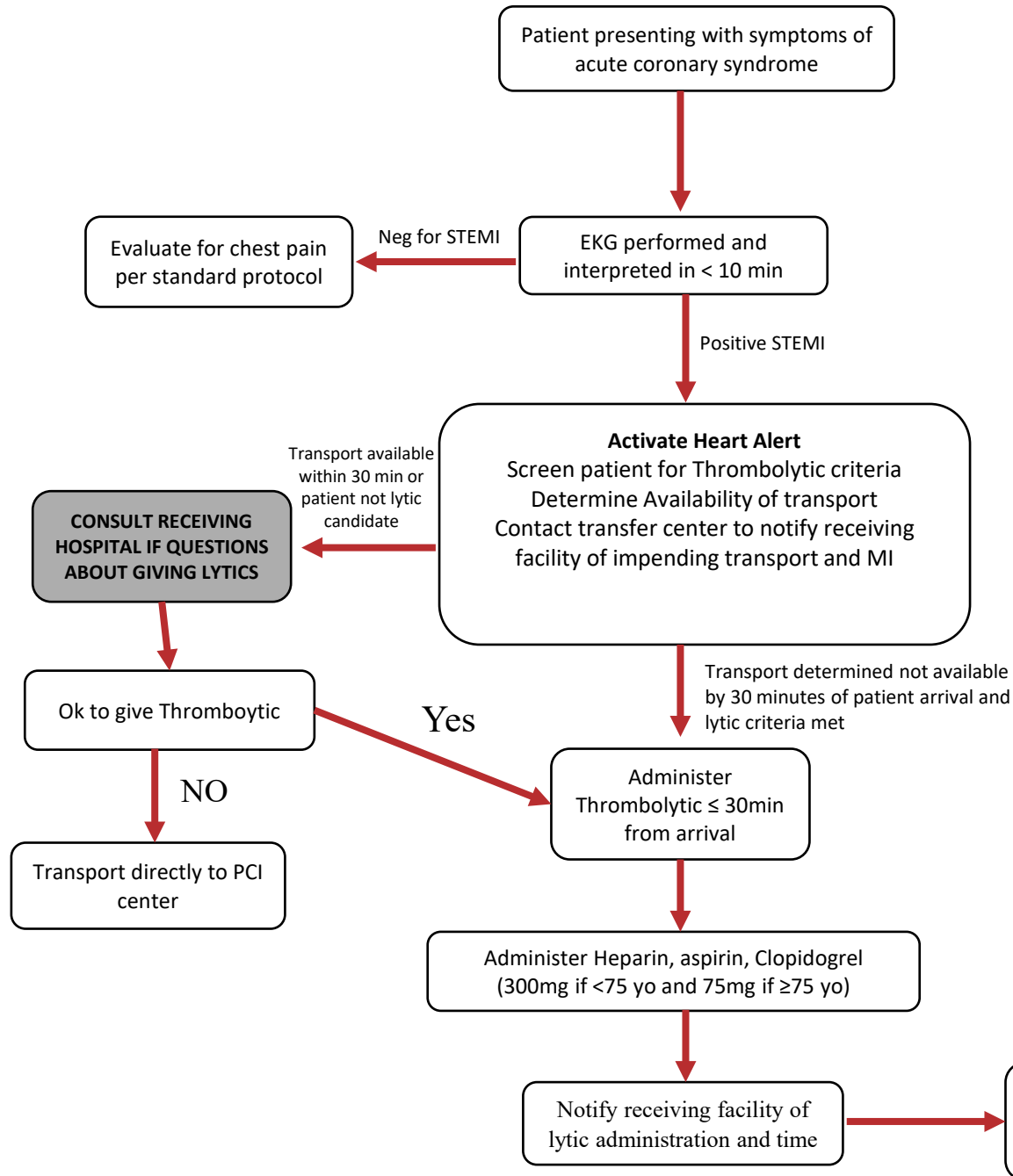
- For clinically stable patients guidelines recommend from 2.5–3 hours up to 24 hours
- Delays are recommended for stable patients due to an increased risk of bleeding
- Emergent coronary angiography should be performed in patients who:
  - Do not have reperfusion
  - Have shock
  - Have other complications

# Indications for Angiography After Fibrinolytic Therapy

	COR	LOE
<ul style="list-style-type: none"> <li>Cardiogenic shock or acute severe HF that develops after initial presentation</li> </ul>	I	B
<ul style="list-style-type: none"> <li>Intermediate- or high-risk findings on pre-discharge noninvasive ischemia testing</li> </ul>	I	B
<ul style="list-style-type: none"> <li>Spontaneous or easily provoked myocardial ischemia</li> </ul>	I	C
<ul style="list-style-type: none"> <li>Failed reperfusion or reocclusion after fibrinolytic therapy</li> </ul>	IIa	B
<ul style="list-style-type: none"> <li>Stable* patients after successful fibrinolysis, before discharge and ideally between 3 and 24 h</li> </ul>	IIa	B

\*Clinical stability is defined by the absence of low output, hypotension, persistent tachycardia, apparent shock, high-grade VT or symptomatic SVT, and spontaneous recurrent ischemia.

# Lytic Algorithm



## Absolute Contraindications

- Active internal bleeding
- Recent stroke (3 hrs to 3 months)
- Intracranial or intraspinal surgery or trauma within 2 months
- Intracranial neoplasm, arteriovenous malformation, or aneurysm
- Known bleeding diathesis
- Severe uncontrolled hypertension (SBP > 180 mmHg and/or DBP >110 mmHg)

## Relative Contraindications

- Recent major surgery (CABG, OB delivery, organ biopsy, previous puncture of noncompressible vessels)
- Any other condition in which bleeding is a significant hazard or difficult to manage because of its location
- Recent trauma
- Currently receiving oral anticoagulants
- Recent gastrointestinal or genitourinary bleeding
- Subacute bacterial endocarditis
- Cerebrovascular disease
- Pregnancy

# Other Considerations

- Nursing monitoring
  - Hemodynamic
  - Neurologic
- Definition of reperfusion
- EMS thrombolytic delivery

# Indications for urgent /emergent angiography after fibrinolytics

- Complete CP relief +  $>70\%$  ST resolution (index lead with most STE) correlated with NL flow
- Complete (or near complete) STE resolution at 60-90 minutes associated with patent IRA
- Lack of STE resolution by  $>50\%$  in the worst lead at 60-90 minutes  $\rightarrow$  c/w occluded artery  $\rightarrow$  strong consideration of immediate angiography and “rescue” PCI



# Thank you!

For questions, please contact us at:

[Info@VCSQI.org](mailto:Info@VCSQI.org)

