Virginia Heart Attack Coalition Pre-Hospital STEMI Data Definitions

INTRODUCTION

Optimal STEMI processes are built upon robust systems of pre-hospital care, including early EMS identification and cardiac cath lab notification. The standardization of STEMI care definitions supports a more cohesive approach to prehospital STEMI recognition, performance assessment, and process improvement. By utilizing standard terminology, EMS providers and health systems can establish a shared understanding of what constitutes an appropriate cath lab activation, what is meant by bypassing the ED, and the distinction between STEMI Activations and Alerts. This improves patient care pathways, enables more accurate performance measurement, and enhances cross-system collaboration. Ultimately, patients benefit and resources are more efficiently allocated through reduced unnecessary activations, minimized ED delays, and streamlined workflows.

The following definitions align with the clinical decision-making framework outlined in the PreAct STEMI Algorithm developed by the American Heart Association's Mission: Lifeline Program (Kontos et al., 2020). This algorithm has been incorporated into this document to visually support the definitions and clarify appropriate EMS and ED pathways for STEMI care.

DEFINITIONS

Overcall:

EMS declares a prehospital STEMI Alert resulting in cardiac cath lab activation. However, on initial presentation the patient and/or ECG do not meet STEMI criteria, the patient does not undergo emergent coronary angiography and is ultimately not diagnosed with a myocardial infarction (MI) of any type.

Undercall:

EMS **does not** declare a prehospital STEMI Alert and the cath lab is **not** activated, prior to hospital arrival. However, on initial presentation, the patient assessment and/or pre-hospital ECG **do** meet STEMI

criteria, the patient **does** undergo emergent coronary angiography and **is** ultimately diagnosed with a myocardial infarction (MI) of any type.

Correct Call:

EMS declares a prehospital STEMI Alert resulting in cardiac cath lab activation. The initial patient assessment and pre-hospital ECG **do** meet STEMI criteria, the patient undergoes emergent coronary angiography and **is** ultimately diagnosed with a myocardial infarction (MI) of any type.

This includes cases where a STEMI was identified, but the patient was ***not*** taken to the cath lab for any reason (not a candidate, patient refusal, cath services not available, etc.)

Direct to Cath Lab:

Also known as "Emergency Department Bypass"

- The patient either passes through the ED, or via another route outside of the ED, to go directly from the field to the cardiac cath lab.

  or

- The patient pauses or "pit stops" in the ED but the patient **is not taken off the stretcher**, **does not reside in the ED for >5 minutes**, and **the patient does not receive a second ECG upon arrival**.

These definitions were developed by the VHAC ED Bypass Clinical Workgroup. For more information on VHAC, please visit www.vaheartattackcoalition.org.
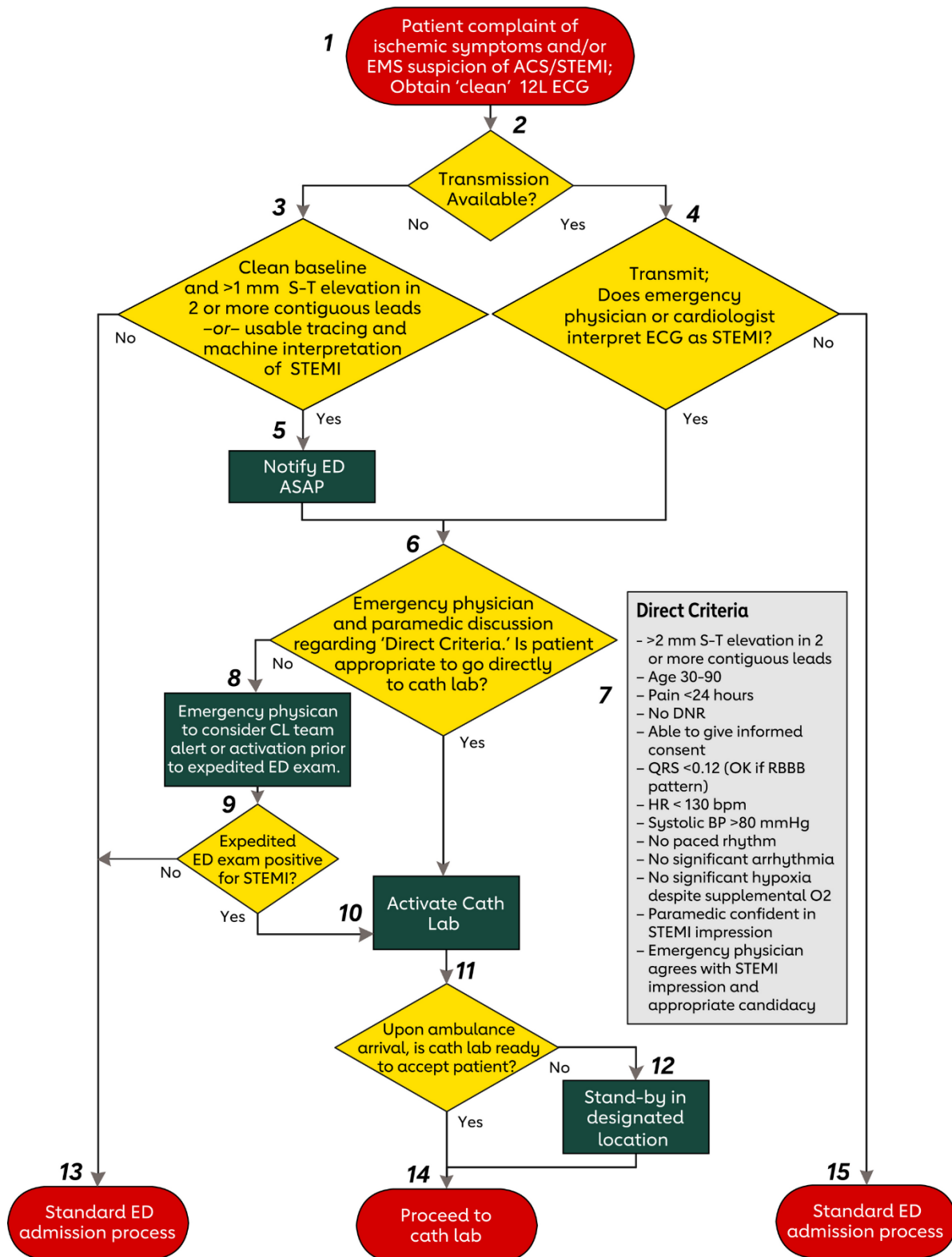
Figure: Prehospital Activation and Direct-to-Cath Lab STEMI Algorithm. Adapted from Kontos et al., Journal of the American Heart Association, 2020. DOI: 10.1161/JAHA.119.011963