

MEDIC-Endorsed Guidelines for the Safe Discharge of Adults with Low Risk Chest Pain from the ED

Supplemental Material

What is MEDIC?

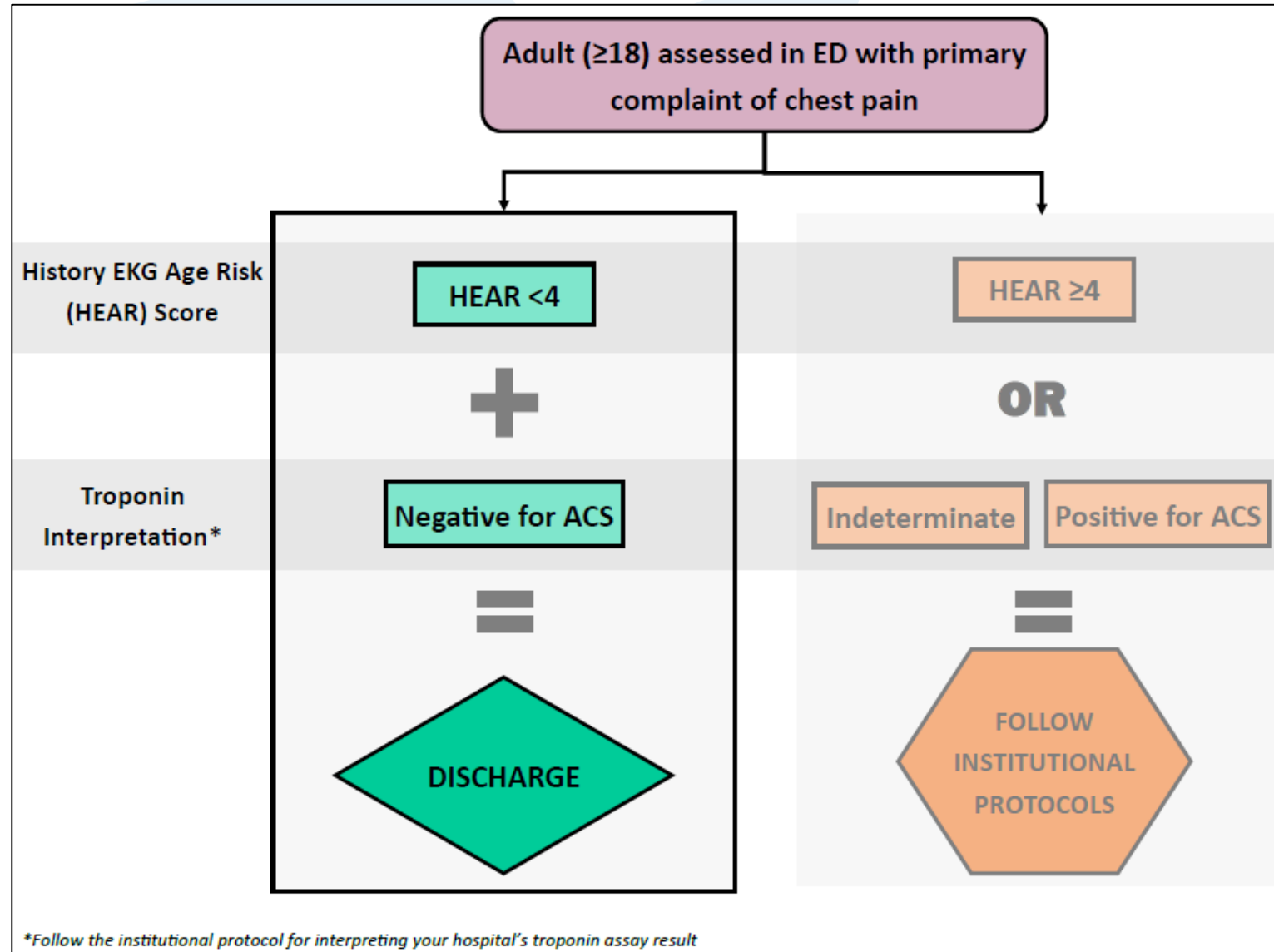
- The [Michigan Emergency Department Improvement Collaborative \(MEDIC\)](#) was launched in 2015 as an emergency physician-led quality improvement Collaborative comprised of hospitals across Michigan.
- MEDIC partners with emergency physicians who work together to collect and analyze data, identify best practices based on medical evidence, and improve collective performance.
- Participating EDs submit data to a clinical registry maintained by the MEDIC Coordinating Center.
- Support for MEDIC is provided by Blue Cross Blue Shield of Michigan and Blue Care Network within the [BCBSM Value Partnerships](#) program.

Why Standardize ED Guidelines for Safe Discharge of Adults with Low Risk Chest Pain?

- Chest pain is one of the most common reasons patients go to the ED
- Chest pain evaluations have wide variation in practice
- Decrease use of limited resources, including repeated laboratory testing
- Decrease ED length of stay, improve throughput, crowding, & boarding
- Hospitalizations can cause harm, medical waste, & excess costs

Why this decision aid?

- Nationally recognized
- Developed for the ED context
- Increasingly utilized as standard-of-care
- Safely improves ED evaluation & disposition decisions for adults with chest pain
- Endorsed by MEDIC after systematic vetting process



Derivation of the HEART Score Decision Aid



GOALS

To adopt an evidence-based tool that aids in identifying low risk adult (age ≥ 18) ED patients with chest pain.

RATIONALE

The HEART score was specifically derived & validated for the ED setting using readily available information. It identifies adult (age ≥ 18) ED patients with chest pain at low risk of short-term cardiac events (acute myocardial infarction, percutaneous coronary intervention, coronary artery bypass graft surgery & death) after discharge.

The HEART score is reproducible among emergency department providers.

LITERATURE

Backus BE, et al. Chest pain in the emergency room: a multicenter validation of the HEART score. *Critical Pathways in Cardiology*. 2010;9(3):164-169.

Gershon CA, et al. Inter-rater Reliability of the HEART Score. *Academic Emergency Medicine*. 2018;26(5):552-555.

Testing & Validation of the HEART Pathway & MEDIC's HEAR+T Decision Aid

GOALS

Promote widespread adoption of the HEART Pathway as a tool for identifying adult ED patients with chest pain safe for discharge.

Disseminate MEDIC's HEAR+T decision aid.

RATIONALE

MEDIC's HEAR+T decision aid is equivalent to the HEART Pathway.

The HEART Pathway integrates troponin testing and recommends discharge from the ED of patients with chest pain when: (1) HEART score <4 ; &, (2) troponin assessment is negative for acute coronary syndrome.

The HEART Pathway has been shown via rigorous testing to safely increase ED discharge of patients with chest pain without causing harm.

Mahler SA, et al. The HEART Pathway Randomized Trial. *Circulation: Cardiovascular Quality and Outcomes*. 2015;8(2):195-203.

Stopyra JP, et al. The HEART Pathway Randomized Controlled Trial One-year Outcomes. *Academic Emergency Medicine*. 2018.

Laureano-Phillips J, et al. HEART Score Risk Stratification for Low-Risk Chest Pain Patients in the Emergency Department: A Systematic Review and Meta-Analysis. *Annals of Emergency Medicine*. 2019;74(2):187-203.

LITERATURE

Population-Level Implementation of the HEART Pathway & MEDIC's HEAR+T Decision Aid



GOALS

Disseminate MEDIC's HEAR+T decision aid.

RATIONALE

The HEART Pathway has been successfully implemented within multi-site, real world, population level quality improvement programs.

Ljung L, et al. A Rule-Out Strategy Based on High-Sensitivity Troponin and HEART Score Reduces Hospital Admissions. *Annals of Emergency Medicine*. 2019;73(5):491-499.

Mahler SA, et al. Safely Identifying Emergency Department Patients With Acute Chest Pain for Early Discharge: HEART Pathway Accelerated Diagnostic Protocol. *Circulation*. 2018;138(22):2456-2468.

Sharp AL, et al. Effect of a HEART Care Pathway on Chest Pain Management Within an Integrated Health System. *Annals of Emergency Medicine*. 2019;74(2):171-180.

LITERATURE

Endorsement by professional bodies



GOALS

Understand evidence assessment by the American College of Emergency Physician (ACEP).

RATIONALE

The American College of Emergency Physicians (ACEP) Clinical Policy review assigns the HEART score a Level B recommendation for use as a clinical prediction instrument for risk stratification for ED patients with chest pain.

LITERATURE

Tomaszewski CA, et al. Clinical Policy: Critical Issues in the Evaluation and Management of Emergency Department Patients with Suspected Non-ST-Elevation Acute Coronary Syndromes. *Annals of Emergency Medicine*. 2018;72(5):e65-e106.

What about high sensitivity vs conventional troponin?



GOALS

Compile a first iteration of an evidence-based endorsed practice that is compatible with any troponin assay.

This endorsed practice needs to be applicable to all MEDIC sites, ED capabilities, & aligned with the current widely-accepted science.

RATIONALE

The HEART score has been tested & performs well in conjunction with all types of troponin assays.

MEDIC HEAR+T score is compatible with any type of troponin assay, including conventional & high-sensitivity troponins.

LITERATURE

Laureano-Phillips J, et al. HEART Score Risk Stratification for Low-Risk Chest Pain Patients in the Emergency Department: A Systematic Review and Meta-Analysis. *Annals of Emergency Medicine*. 2019;74(2):187-203.

What about ED management of ELEVATED risk chest pain?



GOALS

Allow flexibility for MEDIC sites as determined by local protocols & ED capabilities.

ED patients with elevated risk chest pain require further testing and treatment, commonly in hospital observation or inpatient units.

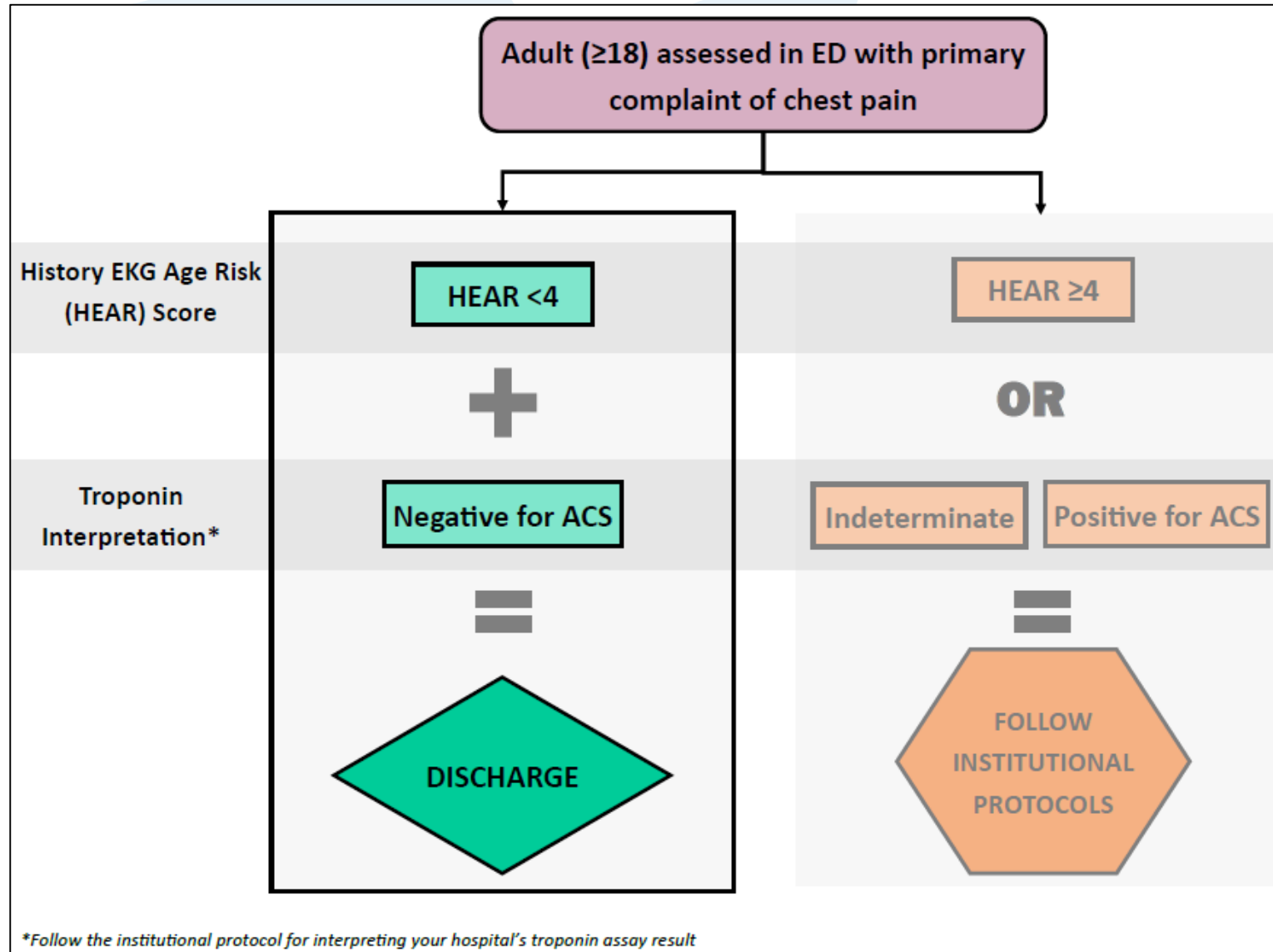
RATIONALE

EDs & hospitals have different protocols, facilities, & staffing available to them.

At this time, it is not reasonable for MEDIC to standardize the care pathway for ED chest pain patients with elevated risk.

Why this decision aid?

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Key References

- Backus BE, et al. Chest pain in the emergency room: a multicenter validation of the HEART score. *Critical Pathways in Cardiology*. 2010;9(3):164-169.
- Gershon CA, et al. Inter-rater Reliability of the HEART Score. *Academic Emergency Medicine*. 2018;26(5):552-555.
- Laureano-Phillips J, et al. HEART Score Risk Stratification of Low-Risk Chest Pain Patients in the Emergency Department: A Systematic Review and Meta-Analysis. *Annals of Emergency Medicine*. 2019;74(2):187-203.
- Ljung L, et al. A Rule-Out Strategy Based on High-Sensitivity Troponin and HEART Score Reduces Hospital Admissions. *Annals of Emergency Medicine*. 2019;73(5):491-499.
- Mahler SA, et al. The HEART Pathway Randomized Trial. *Circulation: Cardiovascular Quality and Outcomes*. 2015;8(2):195-203.
- Mahler SA, et al. Safely Identifying Emergency Department Patients With Acute Chest Pain for Early Discharge: HEART Pathway Accelerated Diagnostic Protocol. *Circulation*. 2018;138(22):2456-2468.
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- Stopyra JP, et al. The HEART Pathway Randomized Controlled Trial One-year Outcomes. *Academic Emergency Medicine*. 2018.
- Tomaszewski CA, et al. Clinical Policy: Critical Issues in the Evaluation and Management of Emergency Department Patients With Suspected Non–ST-Elevation Acute Coronary Syndromes. *Annals of Emergency Medicine*. 2018;72(5):556-557.